

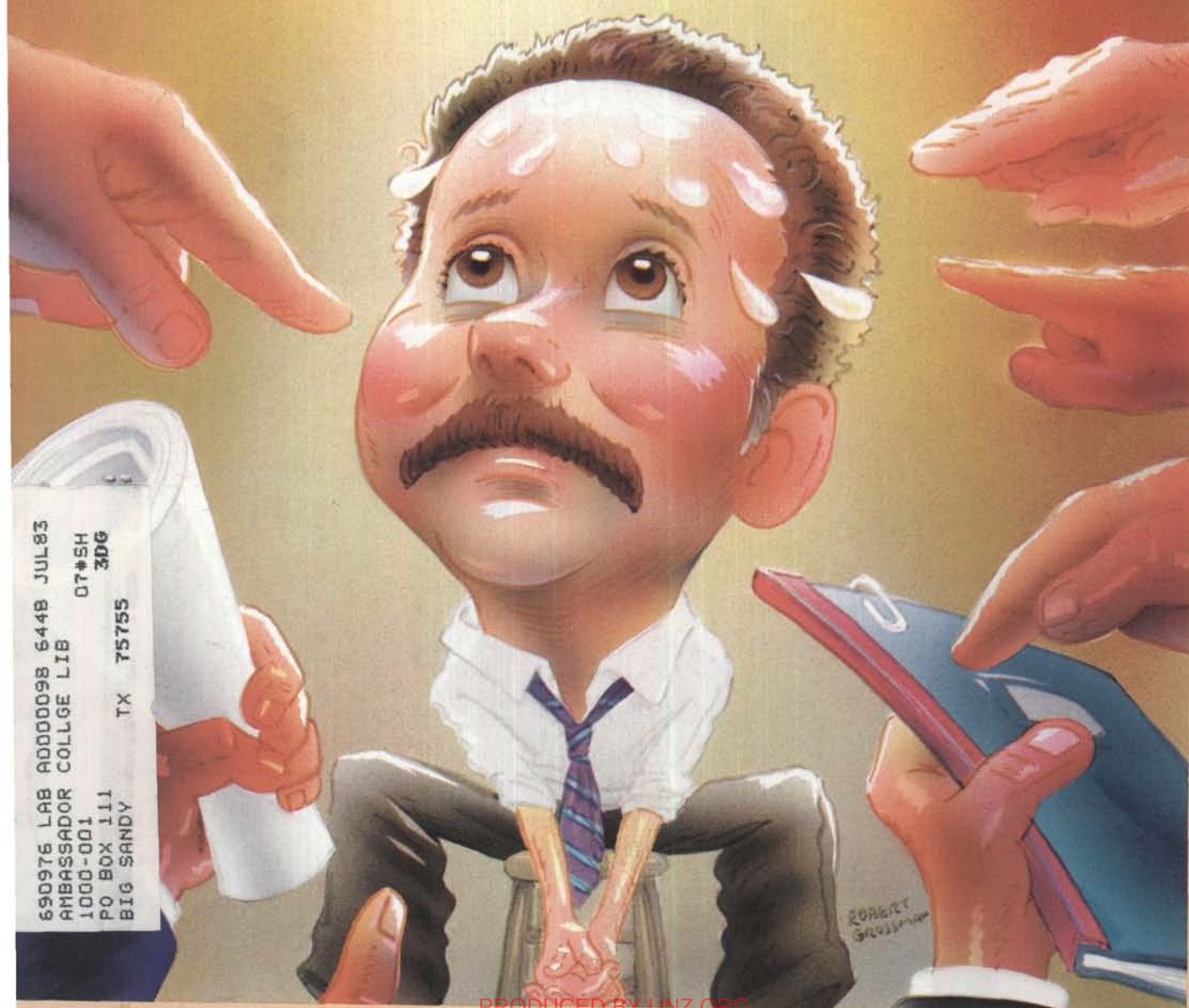
THE Atlantic

PETER ROGERS ON THE FUTURE OF WATER / BOB KUTTNER ON THE LOSS OF MIDDLE-CLASS JOBS

THE ORDEAL OF KENNETH ADELMAN

*Why the new arms-control director was caught in a clash
of two world views in the Senate*

BY JAMES FALLOWS



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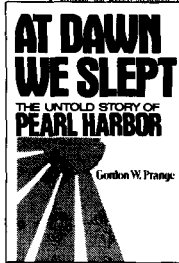
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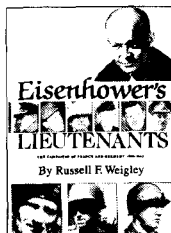
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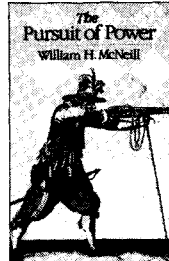
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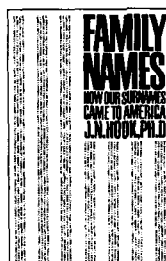
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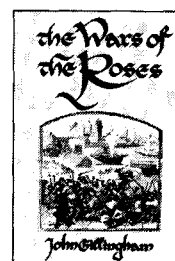
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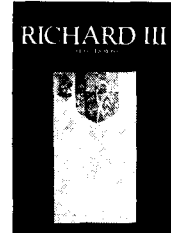
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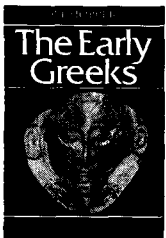
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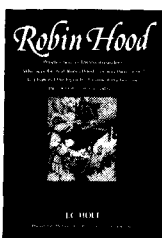
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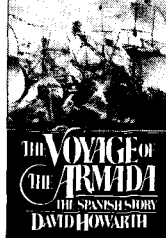
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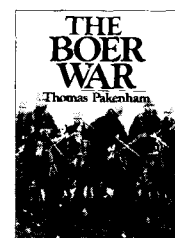
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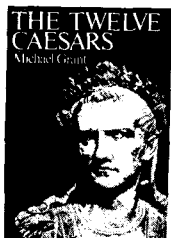
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LETTERS TO THE EDITOR

MORE ON ROBERT REICH

Professor Robert B. Reich's article "The Next American Frontier" (March *Atlantic*) was beautifully written, insightful, and, most of all, needed. There are two small points in it, however, to which I take some exception: the dismissal of the negative impact of governmental regulation on U.S. economic growth; and the complete dismissal of consultants as those who only move boxes around on paper.

With regard to the first point, it is not a well-settled issue. Yet my intuition that regulation, especially environmental protection, has seriously impacted productivity is borne out by several studies (e.g. E. F. Denison, "Accounting for Slower Economic Growth," Brookings Institution, Washington, D.C., 1979). Denison concludes that pollution-abatement regulations reduced annual productivity growth in the United States by 26 percent between 1973 and 1976.

Certain U.S. firms have turned environmental-protection legislation to their advantage by recapturing previously discarded substances. But the number is embarrassingly small.

The key to this issue has been noted by Jordan D. Lewis ("Technology, Enterprise, and American Economic Growth," *Science*, March 5, 1982): "There is, however, a striking difference between respective regulatory processes. In both Japan and the United States, environmental and business interests are often bitter antagonists. But in Japan, once emission standards are set, they are enforced by persuasion and technical guidance rather than by coercion."

As to the second point, the dismissal is too sweeping. The academic community is not the only sector to have noted the problem and posed solutions. In a more pragmatic way, many consultants have been struggling with individual clients, first, to raise "their level of consciousness," that is, admit to the problem; and second, to propose and implement workable solutions. The consulting disciplines involved extend far beyond organizational development.

The root problem, as Reich so aptly

puts it, is one of culture and attitude; and these elements strongly resist change.

GENE ALTSHULER
New York, N.Y.

Compared with other analyses of the economy, Robert Reich's compelling arguments in "The Next American Frontier" were like a breath of fresh air in a musty room. Yet I found his conclusions surprising.

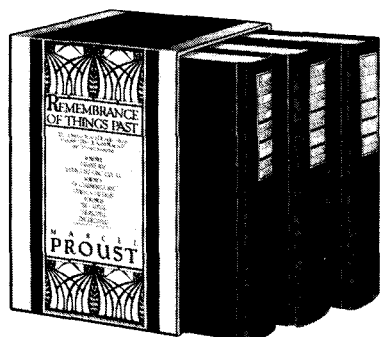
Reich's eloquent criticism of protectionism led me to conclude that if the government intervenes in *any* sector of the economy, the effects spread like ripples to many other sectors. If the government declines further intervention, the resulting imbalances create injustice: some economic sectors benefit at the expense of others. If the government attempts to correct the imbalances through further intervention, more ripples are generated, requiring even further intervention, until the result is a proliferation of regulations under which flexibility would be impossible. Yet what solutions does Reich advocate? Government programs for this and tax incentives for that. In other words, more intervention.

There is another reason why government intervention stifles flexibility. Good government, being essentially an instrument of justice, governs through laws, which are by intent inflexible, especially in a democracy. "Flexibility" in government, if those two words are not contradictory where large governments are concerned, means giving power to single persons or committees whose actions are unconstrained by such rigid concepts as property rights. I doubt this is a desirable alternative.

A government that undertakes both to practice intervention and to remain just not only stifles flexibility but would also find itself exerting a degree of total control that would likely be difficult to reconcile with the concept of freedom. Thus we seem to be offered three choices: just government with minimal intervention, unjust government with partial intervention, or government without freedom.

If we must accept intervention, then

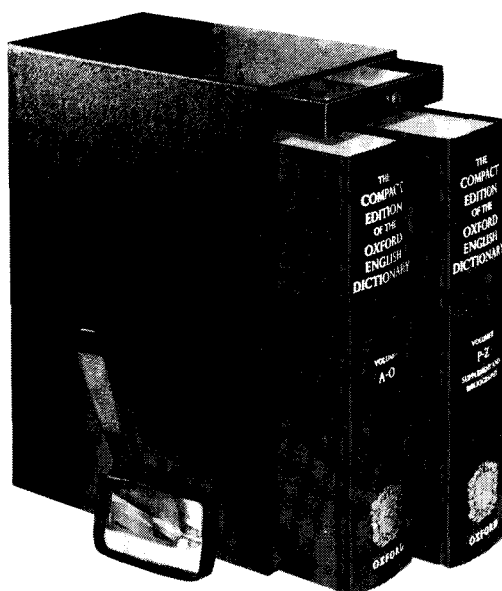
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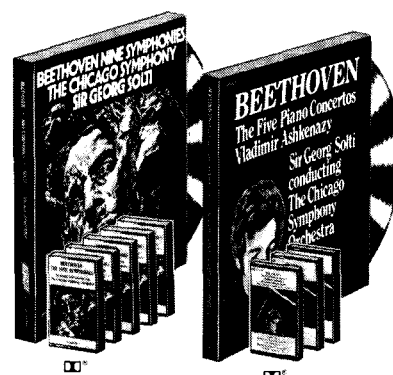
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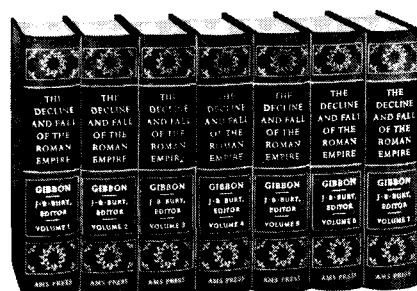
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the measures proposed by Reich make sense, and we certainly would be no worse off for trying them. Perhaps we would be better off. I would suggest, however, that he rethink his idea that the free market is an "artificial" concept. While it is true that some "intervention" may be necessary because the division between rights and economics is not sharp, the enforcement of rights should be the primary reason for such intervention. A free market, seen as minimal intervention, seems a viable alternative, both for maintaining our economic strength through flexibility and for preserving our freedom.

DOUGLAS G. TALLEY
Pittsburgh, Pa.

VOTING FOR UNEMPLOYMENT

Gregg Easterbrook fails to support his contention that the wage demands of labor unions are unjustified ("Voting for Unemployment," May *Atlantic*). He cannot seem to extract himself from the quandary of determining whether or not management bargains in good faith. See, for example, his statement "Given the creative possibilities of modern bookkeeping . . . it is only natural that unions should be uncertain about whether the numbers are accurate or not."

More compelling evidence exists that big business in America exerts a predominant influence on politics and daily life. What major corporations unite in seeking from Presidents and Congresses, they usually get. They manipulate markets, eliminate small rivals, dominate suppliers, and coerce communities and local officials for tax and other advantages. In pursuit of profit, corporate America gives as little heed as it dares to the welfare of employees and customers. Labor unions provide one needed check on this plutocracy.

BRICE WEBBER
Cape Coral, Fla.

Gregg Easterbrook makes a perceptive analysis of how artificial wage rates create unemployment. If only we had the courage to face the full import of that analysis. Arbitrary wage rates are the *only* cause of unemployment. If we allowed wages to find their true values as we do shirts and automobiles, there would be no such thing as unemployment, no matter how much automation

eliminated specific jobs. Everybody's labor is worth something, so it follows that if an individual can't sell his labor, there is some artificial barrier that won't permit it.

RICHARD A. DAVIS
Columbus, Ohio

DREAM MACHINE

While William Lanouette's article "Dream Machine" (April *Atlantic*) is interesting, the author passes over the substantial base of experience in worldwide breeder programs; as a result, the article portrays the political story of the U.S. breeder programs as though it were the technical story.

The experience of every group (including the U.S. Navy) that has established a liquid-metal-cooled-reactor development program and built a reactor has been that even the first machines have performed reasonably well. The basic technology is well understood.

The author has overlooked the fact that, from a technical perspective, the development of any technology is likely to have a learning curve. When the learning curve has no major technical failures, as is the case with breeder technology, the effort has been successful. One would not undertake such a development effort if it were possible to "buy the finished product off the shelf." The article should have discussed the consequences of the *technical* problems in the U.S. breeder program. For example, although EBR-1 suffered substantial damage to its nuclear core as a result of an experiment, there were no health-and-safety-related consequences to the plant personnel or the public. After cleanup and refurbishment, EBR-1 was again placed in operation and completed its mission. In fact, the public can walk through the EBR-1 today, as it is now a national historic site.

Why condemn a technology because of dissatisfaction with the nontechnical aspects of that technology? Nor should breeder technology be blamed for high interest and inflation rates, continual delays, and political uncertainties of the program. Indeed, the political problems plaguing the U.S. breeder program do not negate previous U.S. technical experience with liquid-metal fast-breeder reactors (LMFBRs), nor the experience of France, Great Britain, the Soviet Union, Japan, and other countries.

If the U.S. wishes to plan prudently for its energy future, it must not turn its back on an existing technology that can convert a current waste product (U-238) into energy resources that rival U.S. coal resources or all the oil now known in the world.

H.O. REINSCH
*President, Bechtel Power Corp.
San Francisco, Calif.*

Two complaints about "Dream Machine." First, despite physicist Theodore Taylor's belief, at least two engineers (Jimmy Carter and I) prefer the thorium breeder to the plutonium version à la Clinch River. The public must be made aware of the thorium/U-233 breeder alternative, and I wish Lanouette had given it more emphasis. A reactor that can produce its own fuel yet cannot produce plutonium may indeed have a useful role.

My other complaint is the statement that nuclear power is "not a factor" in relieving our oil dependence. While electric vehicles have not experienced the success of, say, video games, their technical feasibility is improving steadily, particularly in hybrid versions such as electric/flywheel. But this technology will remain on the back burner unless investors can foresee an abundant, inexpensive source of electricity.

Now DOE and the utility industry have offered an olive branch to Congress in the form of an additional \$1 billion in private-sector funding for Clinch River. Is it too late for alternatives?

Thank you for an excellent article.

SANDRA K. BIDWELL
Tucson, Ariz.

William Lanouette's article is excellent. The historical perspective he has provided will help Congress and the public understand the issues at stake in this debate.

SENATOR PATRICK LEAHY
Washington, D.C.

William Lanouette replies:

Ms. Bidwell's preference, the thorium to-uranium breeder, does offer some advantages over its uranium-to-plutonium counterpart: thorium breeders use safer "slow" neutrons; they contain, and they make, less explosive material; and their by-product—U-233—is a little more difficult to fashion into bombs than plutonium is.

Yet thorium breeders cause problem

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The 1971 "Cinnamon Teal" by Maynard Reece is popular not only for its design but also because this artist has created an unprecedented five Duck Stamps.



The 1979 "Green-Wing Teal" by Ken Michaelsen shows the artist at the height of his powers. It established him as one of the most gifted wildlife artists of our time.



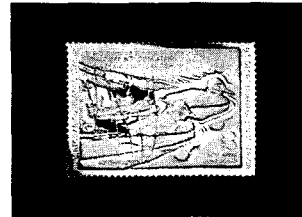
The 1940 "Black Ducks" by Francis L. Jaques is among the rarest issues in the series. Its design is regarded as one of the most powerful on any Duck Stamp.



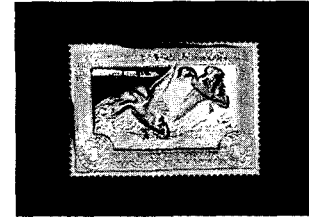
The 1949 "American Goldeneyes" by Roger Preuss, who has earned world-wide critical acclaim. He was the youngest artist ever chosen to design a Duck Stamp.



From "American Goldeneyes": Photographically enlarged to show the exceptional detail of each gold on sterling Proof in the collection.



The 1960 "Redheads" by John A. Ruthven is a favorite of sportsmen and collectors, who admire it both for its artistic merit and for its mood of tranquility.



The 1934 "Mallards Dropping In" by Jay N. Darling is the historic first Duck Stamp issue, designed by the legendary artist who originated the Duck Stamp idea.

For the first time ever—the complete collection of the 50 United States Duck Stamps, authentically re-created in 24 karat gold on sterling silver as officially authorized by the award-winning wildlife artists who created them.

First Edition Proofs to be issued in limited edition.

Advance subscription deadline: August 31, 1983.

It was half a century ago that the United States Government issued the first official Duck Stamp in support of its new national wildlife conservation program. It bore an original work by one of America's most famous artists. And it opened a new chapter in collecting history—inaugurating a series of annual wildlife stamps that soon became the most admired and eagerly collected works of their kind in the world.

Today, these American Duck Stamps are treasured for their extraordinary beauty and historical importance, as well as their rarity. Unblemished specimens of many issues are in fact so difficult to find that one of the few complete collections in existence has been entrusted to the Smithsonian Institution, where it is on permanent display.

And now, to commemorate the issuance by our Government of the historic 50th Duck Stamp, the world-famous American artists whose works have appeared in the series have—for the first time ever—authorized the re-creation of the complete collection in precious metal. In the enduring beauty of 24 karat gold electroplate on solid sterling silver.

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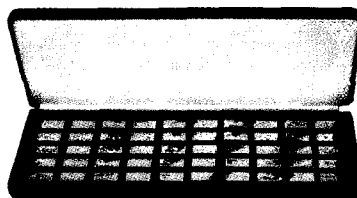
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of their own. If cooled by molten salt, the fuel must be constantly reprocessed. And if cooled by water, the core must be made dangerously dense if it is to breed new fuel at all—itsself a doubtful achievement. (Proponents of the plutonium breeder succeeded in preventing a molten-salt-cooled breeder from being built, and they are now lobbying to cut short the fuel-testing program for the recently retired water-cooled breeder at Shipping Port, Pennsylvania.)

Nuclear power is not a factor in displacing oil because in most parts of the country the alternative fuel for generation of electricity is coal.

It seems unlikely that the Energy Department and the utility industry can actually raise an additional \$1 billion in private-sector funding for Clinch River, as Ms. Bidwell fears. The alternative funding proposals they advanced this spring all depended on federal loan guarantees and subsidies to attract new capital—hardly a private-sector initiative.

H. O. Reinsch's praise for "worldwide breeder programs" ignores the many technical and economic problems encountered abroad: serious sodium explosions, marginal (or nonexistent) breeding of new fuel, and soaring costs. The French, front-runners in the race for a commercial breeder, want to hold down costs on any future plants they may decide to build by compressing the radioactive core and by eliminating the concrete containment dome—two dubious safety gambles. And, despite their growing need to fuel many conventional reactors, the French intend to use the plutonium from their largest breeder for weapons, not for fuel.

True, EBR-1, in the Idaho desert, was cleaned up for tourists after its tiny, 114-pound core melted in 1955. But the problems that caused the accident persist. Had the plant contained a core of the size used in breeders today, weighing dozens of tons, the site might well have come to resemble a nearby tourist attraction—Craters of the Moon National Monument.

I don't blame breeder technology "for high interest and inflation rates," but only point out its sensitivity to these pressures. And I didn't conclude that breeders might not work or might not be needed at some future time. Rather, I reported that to date they have been a disappointing, costly, and superfluous enterprise.

Finally, by calling the breeder "an existing technology" when it is still unproven, Reinsch demonstrates an important conclusion of "Dream Machine": the breeder is a creation that survives on promising expectations, not practical experience.

FIXED-OBJECT JUMPING

David Schonauer's article on parachuting in Yosemite National Park (May *Atlantic*) contains an error: "El Capitan, which rises about 3,000 feet above the valley floor, is the most famous of the cliffs. Half Dome, about 1,800 feet high, dominates the upper end of the valley." Perhaps Mr. Schonauer meant to write that Half Dome is about 1,800 feet higher than El Capitan, which would be correct. Half Dome soars 4,848 above the valley floor, which is 4,000 feet above sea level.

ALFRED GRAY REID
San Francisco, Calif.

David Schonauer replies:

Mr. Reid is correct in saying that Half Dome has a higher elevation than El Capitan (Half Dome rises 8,842 feet above sea level; El Capitan 7,569 feet). However, the vertical drop from the cliff divers' launching site on Half Dome is less than the drop on El Capitan. For that reason, Half Dome is considered a more dangerous jump.

ADVICE & CONSENT

The article "Guns in the Courts," in your May issue, mentioned plans for "a national information clearinghouse, where victims of handgun violence can learn of the legal actions available to them and obtain a list of lawyers willing to take on their cases; lawyers will be able to find a repository of books and legal briefs for preparing suits." In fact, the Foundation for Handgun Education performs exactly that function now, and has for more than a year. We also make available to victims, their attorneys, and the general public safety patents, manufacturers' production reports, names of expert witnesses, depositions, and sample pleadings.

SAMUEL S. FIELDS
DORENE GIACOPINI
Foundation for Handgun Education
Washington, D.C.

Thank you for publishing Allen Shawn's story of Nadia Boulanger (March *Atlantic*). I was deeply moved by his sympathy and understanding of a great person.

LILLIAN LAVENBURG
Great Neck, N.Y.

Alfred Kazin's review of Edmund Wilson's book *The Forties* (April *Atlantic*) reflects a sorry misuse of language in one glaring sentence. Kazin states "with the old American sense of command natural to his race and class, he was so innately . . ."

Please, Mr. Kazin, what race and what class has a natural and innate command capability? One need not be a Skinnerian psychologist to recognize these words as explanatory fictions, obsolete since John Dewey wrote *Human Nature and Conduct*, if not earlier.

ROY E. BUEHLER
Philomath, Ore.

Kudos to Richard Bausch for a blockbuster story. "All the Way in Flagstaff, Arizona" (April *Atlantic*) will do more in reaching the alcoholic than any other writing I've seen.

PATRICIA MCCALLISTER
Fort Jones, Calif.

To set the record straight—in case you haven't already heard from the Kuwaitis—Edward Jay Epstein, in his intriguing piece in your May issue (Reports & Comment), incorrectly estimates Kuwait's oil reserves.

He said "more than 100,000 gallons of oil in reserves for each of Kuwait's approximately 600,000 citizens." For your information, the most recent figure on Kuwait's estimated petroleum reserves in liquid form is 64,230,000,000 barrels (at 42 U.S. gals/barrel). Assuming Epstein's population figure of 600,000 is correct, this works out by simple arithmetic to be almost 4.5 million gallons for each citizen.

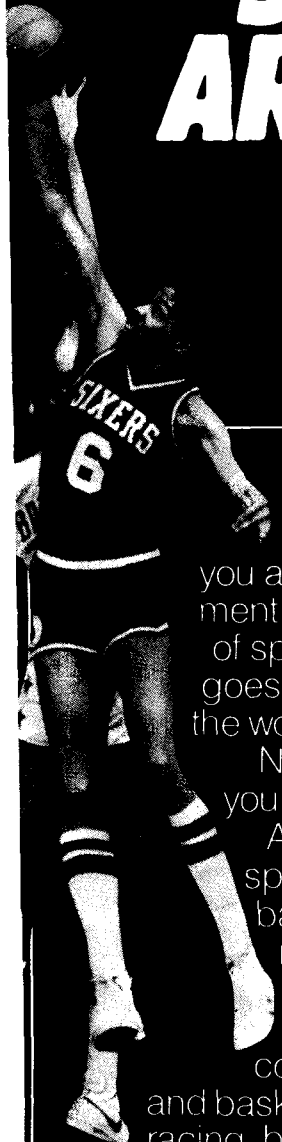
At today's price of approximately \$30 per barrel for crude oil (about 71¢/gal) each citizen of Kuwait "owns" about \$3,190,000 worth of crude oil.

WILLIAM C. UHL
White Plains, N.Y.

Mr. Uhl is correct. The *Atlantic's* calculation, roughly correct for barrels, was not translated into gallons, through an editing error.

THE EDITOR:

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REPORTS & COMMENT

MILITARY SPENDING ARE WE FALLING BEHIND THE SOVIETS?

The case for greater U.S. defense spending may rest on a misreading of the military balance between NATO and the Warsaw Pact nations



MANY THOUGHTFUL OBSERVERS in America believe that the military might of the Warsaw Pact nations, especially the USSR, has been increasing relative to that of the NATO nations, especially the United States, and that, as a result, the Warsaw Pact nations have achieved military parity with NATO, or have pushed ahead. This military buildup, moreover, is taken as *prima facie* evidence that the Warsaw Pact nations have aggressive intentions vis-à-vis their neighbors.

What explains such a momentous shift of positions in the arms race? The usual answer is that the Soviet Union has increased military spending to a greater degree than the United States has. To reverse this dangerous trend, naturally, the U.S. and its allies have been contemplating similar increases. As President Reagan put it in his State of the Union message on February 18, 1981:

I believe my duty as President requires that I recommend increases in defense spending over the coming years. Since 1970, the Soviet Union has invested \$300 billion more in its military forces than we have.

In the two and a half years since that

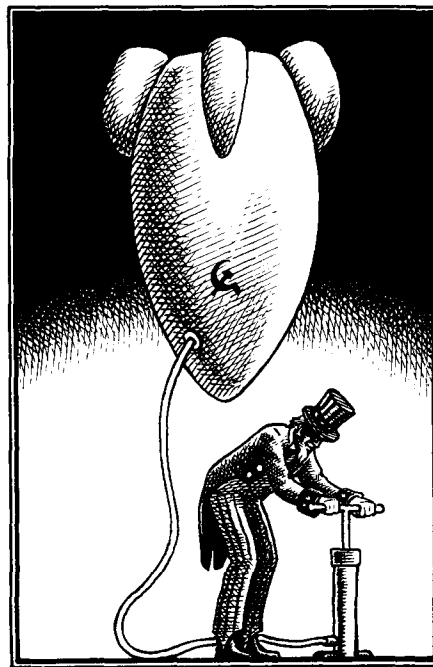
address, the President's apprehensions about Soviet aggressiveness have been reflected in the sharp rise in U.S. military expenditures, our steadfast opposition to the Soviet-Western European gas pipeline, and a steady deterioration of relations in practically every other area in which the two nations interact.

But there is considerable evidence that U.S. estimates of Soviet and Warsaw Pact military expenditures are calculated incorrectly and are presented in a misleading way. With proper calculation and interpretation, the military-spending gaps that favor the Soviet bloc largely disappear. This leads one to question the magnitude of the Soviet bloc's military buildup and to view skeptically the claims of the Administration that the buildup is necessarily offensive rather than defensive.

Several factors help to explain what may be a distorted view of Soviet-bloc military expenditures. Perhaps most important is the tendency of bureaucrats, politicians, and the press to summarize complicated computations with a few simple figures. Two such figures are the CIA annual estimates, widely quoted, that the USSR is currently outspending the U.S. on defense by 50 percent, and that over the decade 1971-1980 the USSR outspent us by \$420 billion (an update of President Reagan's \$300 billion).

Once these figures surface, they begin to have a life of their own; rarely mentioned are the numerous qualifications attached to them by the CIA when they were first released. While the two figures presented may have validity for some purposes, even without qualifications, for other purposes they are misleading and inappropriate. For example, the CIA's 50 percent figure is based on an estimate of Soviet military spending that, when converted into rubles and expressed as a percentage of Soviet GNP, reveals the so-called burden of defense spending, providing an indication of the military drain on Soviet resources. Currently, the CIA estimates that burden at between 12 and 14 percent of GNP. Conceptually speaking, this is a valid use of the CIA's estimate.

Suppose, however, we want a figure that represents the confrontation between the United States and the USSR. President Reagan clearly used the related \$300 billion figure in this way in his State of the Union address. For that purpose, the 50 percent and \$420 billion gap figures are inappropriate, because a large part of Soviet military spending is irrelevant to the superpower confrontation. For example, the Soviet Union maintains an army of roughly 750,000



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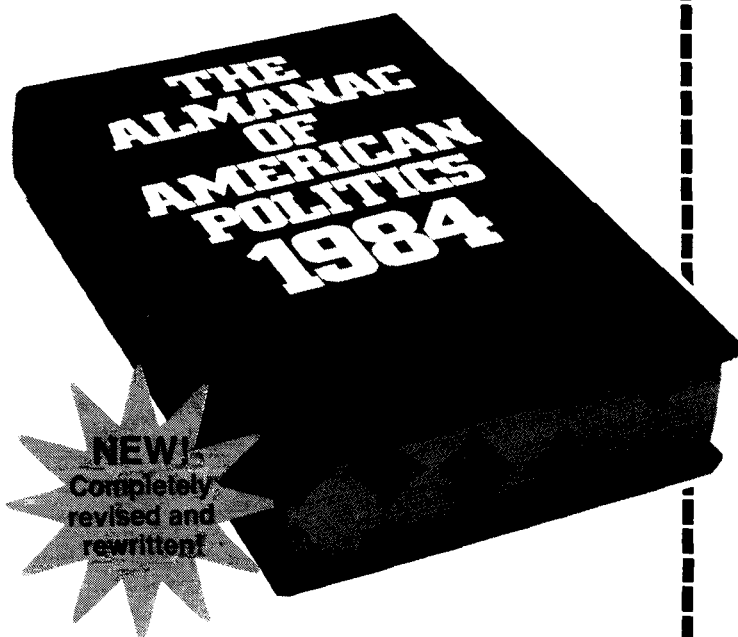
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men on the long Sino-Soviet border. According to Harold Brown, former secretary of defense, in his 1979 annual report, the Soviets "have felt obliged to allocate up to about 20 percent of their total defense effort to the Far East and the PRC [People's Republic of China]." In various statements in the past few years, the CIA has estimated the same figure at between 12.5 and 20 percent.

Money spent by the Soviet Union to support its large army across 5,000 miles of inhospitable terrain has thus not been available to build tanks, planes, and missiles that might be used against the U.S. and its NATO allies. If 15 percent of Soviet expenditures is subtracted from the total (the CIA estimate is \$1,535 billion for the years 1971 to 1980), the current gap is reduced from 50 percent to 27.5 percent and the 1971-1980 expenditure gap is reduced by \$230 billion—that is, from \$420 billion to \$190 billion (all in 1979 dollars).

Thus, both the current and the ten-year spending gaps are roughly halved by removing expenditures directed at China. The appropriateness of removing these expenditures is supported by the Department of Defense's practice of excluding U.S. expenditures on Vietnam when comparing NATO and Warsaw Pact total defense costs.

Finding a true estimate of the gap between Warsaw Pact and NATO "confrontation" spending requires another major adjustment. The CIA restricts its published estimates to comparisons of military spending by the U.S. and the USSR. This establishes a framework for virtually all governmental and media discussions of military spending. In effect, these discussions imply that the U.S. and the USSR confront each other without allies. If the contributions of the NATO and Warsaw Pact nations (other than the U.S. and USSR) were either inconsequential or of roughly equal magnitude, this mode of calculation would make sense. However, as Harold Brown put it in the same annual report, "We are fortunate in having prosperous and willing allies who can help counterbalance the Soviet effort. The Soviets are not so fortunate." According to the authoritative International Institute of Strategic Services, in London, America's NATO allies spent \$94.9 billion in 1980, or almost six times more than the \$16.7 billion spent by Warsaw Pact nations other than the Soviet Union. In fact, France, Great Britain, and Germany each spent

more than all "other" Warsaw Pact nations added together.

If contributions by our allies and the Soviet Union's allies are factored in, the imbalance between NATO and Warsaw Pact military spending is sharply reversed. As of 1980, NATO was still outspending the Warsaw Pact—over the decade, by more than \$250 billion, despite the huge USSR-U.S. dollar gap calculated by the CIA. The \$250 billion difference in NATO's favor makes no correction for Soviet expenditures directed at China. If we take into account the \$230 billion dollars that the Soviets are estimated to have directed at China, the total difference in military spending between NATO and the Warsaw Pact nations rises to \$480 billion.

Another major distortion in comparisons of East-West military spending stems from the practice of relying on dollar valuations to compare the two defense establishments. As the CIA acknowledges:

Dollar cost calculations tend to overstate Soviet defense activities relative to those of the United States. . . . Given different resource endowments and technologies, countries tend to use more of the resources that are relatively cheap—and less of those that are relatively expensive—for a given purpose. A comparison drawn in terms of the prices of one country thus tends to overstate the relative value of the activities of the other.

This so-called index-number effect is not difficult to understand. The Soviets pay their soldiers a very low wage and, perhaps partly for this reason, have more than twice as many men and women in uniform as we do. When we value their 4.5 million military personnel on the basis of our average annual pay, which is close to \$20,000, the result is a very high estimate of Soviet spending. The *reductio ad absurdum* of this methodology is the recently revealed (though unofficial) CIA estimate of Chinese military spending in dollars, which purports to show that the Chinese government is currently mounting a defense effort equal to our own. This bizarre conclusion arises from a calculation of the cost of mobilizing the enormous Chinese army at U.S. pay scales.

The usual, and proper, procedure when comparing real costs in two different monetary systems is to calculate expenditures in the currencies of both na-

tions, in this case in rubles as well as in dollars. The dollar estimate provides an upper limit of Soviet expenditures, the ruble estimate a lower limit (since it exaggerates U.S. expenditures by putting a very high ruble price on our more advanced military technology). An average of the two, usually a geometric mean, can be calculated if one wants a single figure. In most of its other U.S.-USSR comparisons, the CIA follows this procedure. For example, almost two years ago, the Joint Economic Committee of Congress released a CIA study that compared consumption expenditures in the USSR with those in the U.S. and other nations. In the "overview," on the first page of that study, was this statement:

In 1976, real per capita consumption in the Soviet Union was 34.4 percent of that in the United States: this value is the geometric mean of comparisons in rubles (27.6 percent) and in dollars (42.8 percent).

The CIA currently makes defense estimates in both dollars and rubles. However, the ruble comparison, once presented, is thereafter ignored, and the geometric mean is not presented at all. The reason for this practice is not difficult to discern: until a few years ago, the Agency did not know the costs in rubles for many Soviet weapons or other defense materiel. The CIA now claims to have many more prices, and should, therefore, be able to present the geometric mean of the dollar and ruble comparisons as the official estimate. Since the dollar comparison shows the Soviets outspending us by 50 percent and the ruble comparison reduces the difference to 30 percent, the geometric mean works out to 39.6 percent. If this change in the CIA's USSR-U.S. comparison is combined with an adjustment for forces on the Chinese border, the current difference between U.S. and Soviet "confrontation" spending shrinks to below 20 percent, and the ten-year gap between U.S. and Soviet military spending is reduced to roughly \$100 billion (from \$420 billion). It also widens the NATO-Warsaw Pact ten-year gap to roughly \$550 billion, in our favor.

BEFORE WE LEAVE index numbers, three more points need to be clarified. First, while we know more about the costs of Soviet armaments than we did in the 1970s, ruble prices for most military products are still unavailable.



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What this means is that when making ruble estimates, one has to assign value to most weapons first in dollars and then in rubles, using as a basis for conversion the few available ruble prices of other weapons. But ruble comparisons are thus in large part dollar comparisons, and therefore they still exaggerate Soviet military spending. While no precise estimate of the exaggeration is possible, the CIA's estimate that the USSR outspends the U.S. by 30 percent in a ruble comparison is clearly much too high. An adjustment for this distortion would reduce still further Soviet and Warsaw Pact military spending as discussed above.

Second, American advocates of larger military appropriations for equipment procurement point out that the Soviet equipment buildup is made possible by the very low wages the USSR pays its soldiers. As William Perry, former undersecretary of defense for research and engineering, put it in a 1982 review of James Fallows's book *National Defense*, "they can devote half of their budget to equipment procurement while we devote less than a quarter of ours to equipment. . . ." While Dr. Perry's statement is true as far as it goes, it neglects the fact, as put by Stansfield Turner, a former director of the CIA, that "military hardware is much more expensive than manpower in the Soviet Union, while in the United States manpower is relatively more expensive than hardware. . . ." So, the Russians need to spend a greater percentage of their military budget on equipment; we need to spend a greater percentage on manpower.

Third, if Soviet military expenditures vis-à-vis the United States are exaggerated, U.S. estimates of the percentage of Soviet gross national product that is devoted to those expenditures are also likely to be exaggerated. They are—but for reasons other than those already mentioned. The proper way to measure Soviet military expenditures in relation to GNP for the year 1982 would be to value both in 1982 rubles. Unfortunately, the most recent set of ruble prices for military equipment available to our intelligence establishment is for 1970. So, for lack of a better alternative, the CIA is forced to measure Soviet military expenditures and GNP for the years since 1970 in so-called "constant 1970 ruble prices."

If trends in ruble prices of military equipment were representative of GNP

as a whole, then it would not make much difference whether 1970 or 1982 prices were used in the estimate. In fact, however, because of rapid technological advances in Soviet weaponry, the price of any given weapon's capability over the 1970–1982 period must have fallen relative to Soviet prices in general. In this respect, Soviet weapons are like American computers, whose prices have dropped enormously over the past decade, in spite of inflation in the rest of the economy. The more advanced military equipment being produced for Soviet armed forces today would have cost many times more rubles to produce in 1970 than at present. So the most recent CIA estimate (12 to 14 percent) of the percentage of Soviet GNP (for 1980, but in 1970 prices) devoted to military expenditures is certainly an exaggeration, and would undoubtedly be several percentage points lower in 1982 Soviet prices.

THE VIEW of the military spending gap just outlined appears to be greatly at odds with the conventional wisdom that the USSR and its allies have been engaged in an enormous military buildup that has enabled them to reduce or eliminate NATO military superiority, and that this has been accomplished by virtue of increased defense expenditures. If the facts reveal no military spending gap in favor of the Warsaw Pact countries, how can this be reconciled with the Soviet bloc's alleged military buildup?

First, perhaps the military buildup, and the degree to which the Soviets have caught up with us, have been exaggerated. A military effort has many dimensions, and those who sound dire warnings tend to concentrate their attention on areas in which Soviet progress has been most rapid. Further, the emphasis is usually on numbers—quantity rather than quality. Some experts have testified that the U.S. defense effort represents, in part, a sacrifice of quantity for quality. This view was recently echoed by a CIA spokesman before the Senate Armed Services Committee. He stated that U.S. military equipment tends to be produced with "more sophistication, more quality and better performance . . . [more safety], more quality control . . . a more highly designed product" than Soviet equipment. Apparently General John W. Vessey, Jr., chairman of the Joint Chiefs of Staff, feels that this is a

good thing. On May 11, 1982, after admitting that the Soviets had a quantitative superiority in many weapons, he testified to the Senate Armed Services Committee: "But, overall, would I trade with [Soviet Chief of Staff] Marshal Ogarkov? Not on your life."

Listening to the pessimists, one would never know that the U.S. spends almost three times as much as the Russians per soldier in training and maneuvers, or that our missiles are more accurate, or that our subs are superior to theirs, and so forth. One cannot doubt that the Soviets have been catching up, but the degree to which this is true may well have been overstated.

Second, if the Soviets have been catching up, how has this been possible if, as has been shown, the actual military-spending gap is much smaller than official estimates suggest? Military-expenditure comparisons measure cost but not effectiveness and not the wisdom of the expenditure choices. If the United States has been spending money less wisely in terms of our needs than the Soviets have in terms of theirs, then the Soviets could catch up without outspending us.

Much has been written in the past few years regarding the waste and the misdirected expenditures in our defense program. Some general categories of wasteful spending often mentioned are so-called gold-plating of weapons (for example, air-conditioning and power steering in tanks); introducing some technology that is so complex (and expensive) that it can be neither easily operated nor properly maintained by our servicemen; introducing too many competing models and changing models too often, both of which prevent reduction of costs; allowing weapons suppliers very high profits and cost overruns not caused by inflation; maintaining facilities and programs that no longer serve a military function but are good for some congressman's constituency. Further evidence of inefficiency may be adduced from the fact that the balance of forces in Europe does not appear to reflect NATO's much higher levels of military spending.

What are the policy implications of the foregoing? If the view of the military-spending gap presented here is correct, the USSR is not as far ahead of the United States as the Reagan Administration and others contend. Moreover, if the USSR is catching up owing to waste and inefficiency on our part, it hardly

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Photography by Steve Stegman

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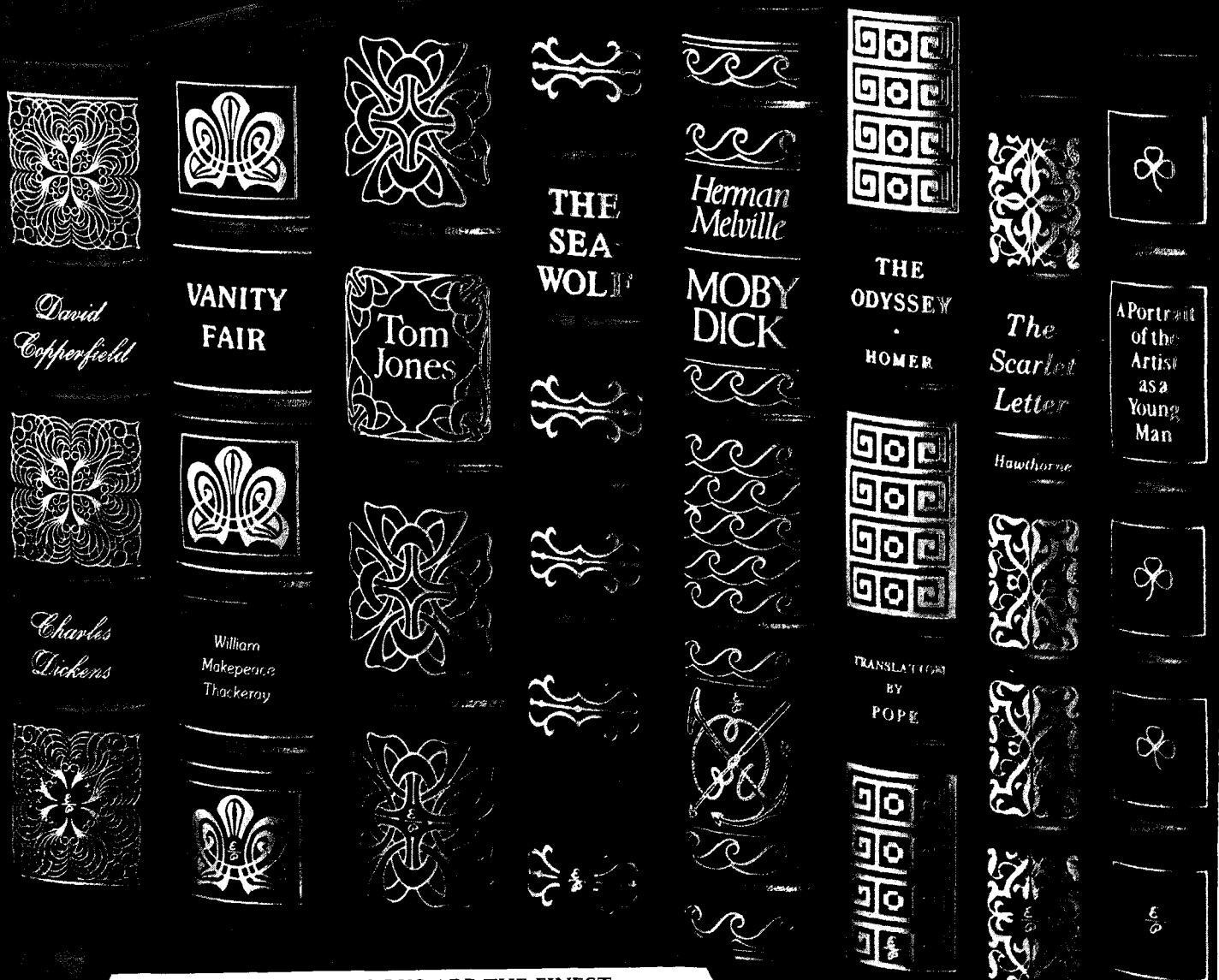
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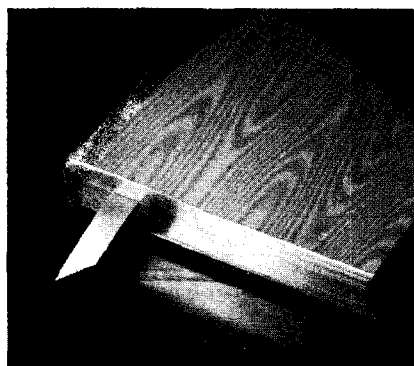
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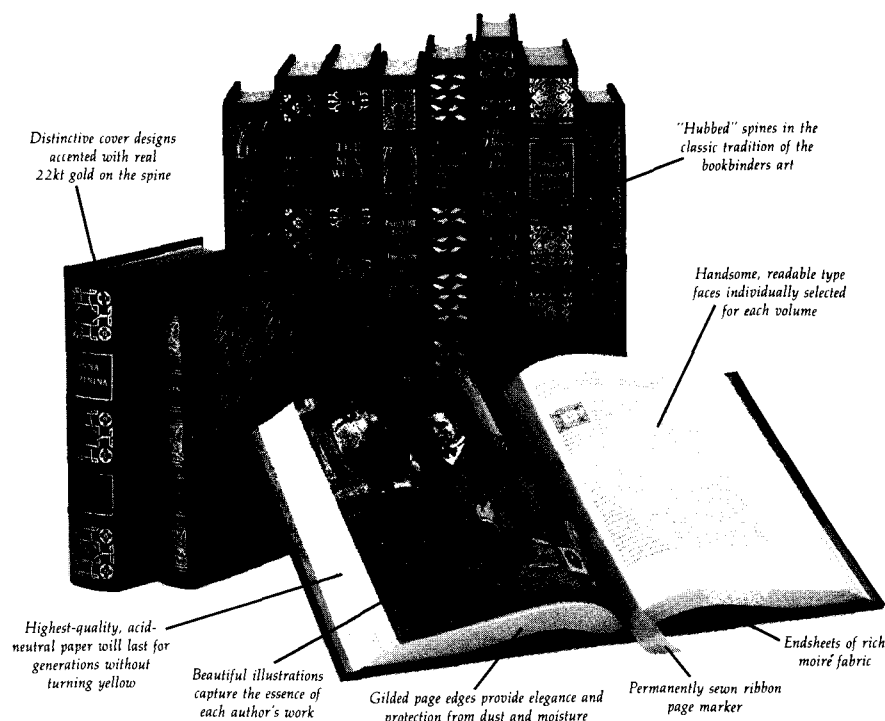
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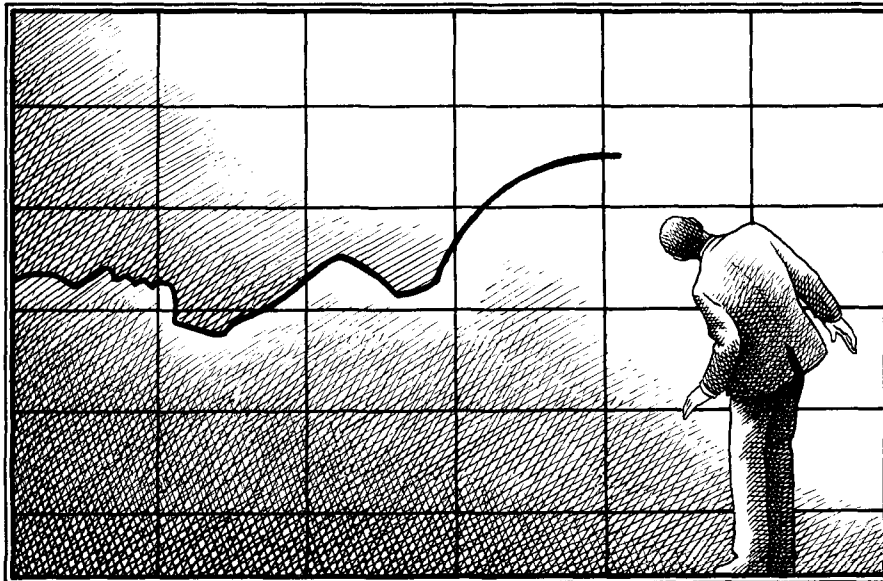
makes sense to throw hundreds more billions of dollars into defense, at the expense of so many of this nation's major civilian priorities, without drastic revision of the military decision-making processes. Preventing the waste of \$50 billion in cost overruns, misguided programs, and the like is as good a way to finance our military buildup as legislating \$50 billion in new taxes or accepting a \$50 billion increase in the national debt.

Finally, while many in this country view the Soviet Union and its allies as outspending us on defense, the Soviet Union probably views the spending com-

petition in the terms just outlined—that is to say, as unfavorable to itself and its allies. If that is the Soviet view—and in fact the USSR views itself as having to take on almost singlehandedly the whole Western industrial world, plus China and Japan—then the motivations behind its buildup may well be less ominous than the Administration believes.

—Franklyn D. Holzman

Franklyn D. Holzman is professor of economics at Tufts University and a research fellow at Harvard University's Russian Research Center. He is the author of Financial Checks on Soviet Defense Expenditures.



DEMOGRAPHICS AN EPIDEMIC OF PUBLICITY

The rate of births to girls between the ages of fifteen and nineteen has fallen by 45 percent since 1957



THE 1950S ARE OFTEN described as America's last virtuous age: divorce rates were much lower than now, church attendance was higher, neither society nor parents had yet been accused of being "permissive," and public references to sex were seldom more than loosely descriptive. At first glance, a much-publicized report released by the U.S. Department of Health and Human Services in December, which revealed that teenage mothers account for one out

of six of all births, seems to confirm this nostalgic view. And, of course, alarming reports of the incidence of teenage pregnancy began to circulate well before 1982. Seven years ago, when births to teenagers accounted for one fifth of the total for all ages, the Alan Guttmacher Institute, the research-and-development division of Planned Parenthood, referred to teenage pregnancy as an "epidemic."

Amid all the anxious words that have been published, few people have considered—or, perhaps, even suspected—the fact that the rate of births to teenagers is actually lower now than it was in 1976, and lower still than it was in the 1950s. The birthrate among adolescents peaked in 1957, when there were 96.3 births per thousand young women, married and single, between the ages of fifteen and nineteen. Since then, the rate for this age group has fallen sharply and steadily; by 1980, it had dropped to 53 births

per thousand. But over the same period there was a still sharper decline, of almost 50 percent, in births to women between the ages of twenty and twenty-nine. Thus, when the number of childbearing teenagers is expressed relative to the population of childbearing women as a whole ("one out of six"), it appears inordinately high. In fact, however, it accounts only for a significant fraction of a shrunken total. Very recently, moreover, the number of births to older women has been rising slightly, causing the total population of childbearing women to grow; as a result, even the fraction of the total accounted for by teenagers is beginning to get smaller. Any unwanted pregnancy is regrettable, but the drop by 45 percent in the birthrate among teenagers should reassure us that no sudden epidemic is at hand.

ONE MIGHT SUSPECT that the birthrate is lower today because teenagers are choosing to have abortions, but as of 1979, only 36.6 percent of unmarried pregnant teenagers did so, according to the most recent surveys of Melvin Zelnik and John F. Kantner, professors of population dynamics at Johns Hopkins University, who have compiled data on teenage fertility-related behavior for more than a decade. Furthermore, the birthrate began to decline in 1960, thirteen years before the Supreme Court legalized abortion. So abortion does not fully account for the lower birthrate now, and it does not begin to account for the decline's commencement in 1960. The decline *can* be explained, however.

The birth-control pill—which, according to the Guttmacher Institute, is used by the majority of sexually active teenagers who equip themselves with contraceptives—first became generally available in the early 1960s. Also in the 1960s, the number of Planned Parenthood affiliates across the country more than doubled. At about the same time, the details of birth control and sexuality began to be discussed publicly without stigma, and information about sex began to proliferate. By 1982, of the 179 largest school districts in the country, which the Urban Institute, a private social-policy-research organization in Washington, D.C., surveyed, 80 percent offered sex education under various course titles in some or all schools. Of these districts, 72.4 percent included in the curriculum at least some information about the use

of contraceptives, and 77.2 percent included information about where contraceptives could be obtained.

Of course, people who are concerned about teenage pregnancy—and they do not come only from the ranks of the Moral Majority—may be just as deeply concerned about teenage sex, and some of them reason that teenagers would be less willing to have sex if there were no sex-education courses or family-planning services available to them. But to the contrary, the evidence of the birthrate in the 1950s—and even today, for that matter—suggests that teenagers do not necessarily base their decisions about sex on how well they can avoid pregnancy as a consequence. Another study, released by Zelnik and Young J. Kim, also of Johns Hopkins, in 1979, bears witness to this fact. The teenagers they surveyed who had taken a sex-education course were no more likely to be sexually active than those who had not. But those who had taken a course were more likely to use a contraceptive if they *were* active than those who had not. One infers, therefore, that the decision to have intercourse is made independent of either sex education or the availability of contraceptives, since teenagers who could take advantage of neither service were not deterred by the lack. Parents who fear that their children might have sex would therefore have a better chance of deterring them at home, as they grow up, than by intervening in the schools or the clinics.

WORRY ABOUT TEENAGE sex and the rate of births to teenagers has political and cultural as well as moral dimensions. Why *should* the statistics be so often cited in the most alarming way? The reason, it seems, is that young women are not dealing with out-of-wedlock pregnancy the way they used to. In the past, "confinement," as a word to describe the period before giving birth, had a literal meaning for unmarried teenagers, especially for those who were white and middle-class. Although black teenagers have rarely chosen adoption or their out-of-wedlock children, it was customary for white teenagers to "go away somewhere," have their babies, and give them up for adoption. This pattern has changed radically. According to the Guttmacher Institute, as of 1976 (the most recent year for which firm statistics are available), 96 percent of unmarried teenagers pregnant for the first

time who carried their babies to term chose to keep them—an increase of 9 percentage points over a period of only five years. The increase has come chiefly from the ranks of whites. The number of black unmarried teenage mothers who kept their babies rose from 94 percent to nearly 100 percent between 1971 and 1976—an increase of about 5 percentage points. But over the same period, the number of white unmarried teenage mothers who kept their babies rose from 75 percent to 90 percent—an increase of 15 percentage points. Judging by preliminary data from more recent studies, Jane Murray, the director of communications and development at the institute, says that these percentages seem to have remained stable in the years since 1976.

The shift in preference from adoption to single parenthood occurred abruptly at about the same time that teenage pregnancy began to be discussed in terms of crisis. It seems likely that the crisis has been perceived not because teenagers are bearing out-of-wedlock children, as has always been the case, but because white society's illusion about who does so has been dispelled.

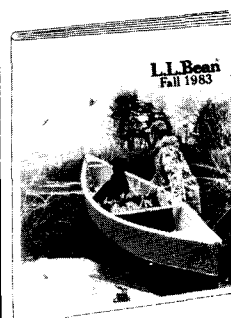
Hasty marriages, hiding pregnancy by "going away," and adoption were the mechanisms by which white middle-class society denied the existence of its children's sexual activity. But today this activity is more visible than it once was, and those who would wish it away are asking the federal government to take steps. In January, the Department of Health and Human Services approved a rule requiring family-planning clinics dependent on federal funds to notify the parents of minors who are given prescription contraceptives. (This rule is currently being challenged in the courts.) A number of congressmen have proposed legislation in recent years that would limit or deny access by adolescents to sex education, contraceptives, abortion, and even certain books. Unfortunately, it is doubtful that these measures will discourage teenagers from having sex, and it is quite likely that they will result in more teenagers having babies that they are unprepared to care for.

— Jo Ann S. Putnam-Scholes

Jo Ann S. Putnam-Scholes teaches in the science department of the public high school in Barrington, Rhode Island, and writes about social issues in biology.

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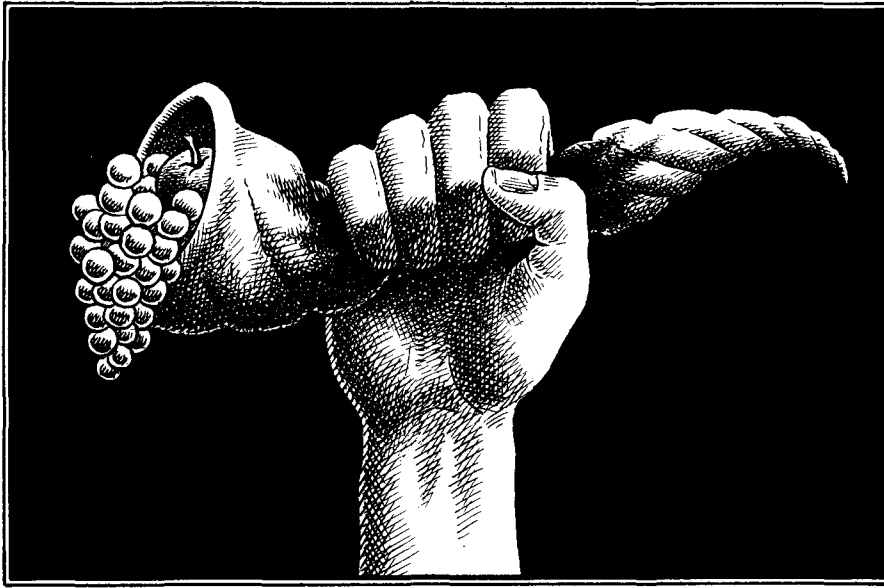
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PEKING TRYING TO MAKE CHINA WORK

A renewed interest in private gain has little chance of improving China's state-controlled economy



“WE CAN’T BE fifteen minutes away from the heart of Peking,” said the California rancher’s wife in disbelief. She gazed at the donkeys, the low, shabby mud houses scattered across vegetable fields, the dirty, weatherbeaten faces staring into our car window, while we bumped our way along a country road (the main “highway” from the port city of Tianjin to China’s capital) through a permanent cloud of dust. “Isn’t this supposed to be one of their fancy big towns, this ‘Beijing?’”

I thought of the city that lay ahead of us. I knew that I would no longer be able to come to China’s defense; my own optimism about the Middle Kingdom had waned. I was already bracing myself for official lies, depressing signs that China’s goals may elude it, pleas by bright but downcast young people to help them come to the West—“for study.”

A decade of Sino-American entente has been good for U.S. policies in Asia, for America’s allies, for the West’s strategic balance with Russia, and for the many Americans and Chinese who have been able to satisfy their curiosity about

each other’s countries. But I could not help asking myself, that cold, still afternoon, if the best of the affair between America and China wasn’t over. As China and the U.S. have drawn closer, interlocked in a thousand ways (eighty Chinese delegations a month visited the U.S. last year, and 100,000 Americans visited China), differences in culture and values have come to the fore.

As we drove into Peking, I realized that even the city proper is a letdown for the new visitor, and increasingly ugly to an old hand. The remaining wonderful monuments and palaces, and the graceful streets of traditional houses in gray brick with red pillars, are being choked by overpasses and oblong housing blocks with no trace of Chinese character. Inner-city chimneys belch out smoke. Buildings are poorly maintained. Except for a tiny elite, the people in the streets and shops lack flair in dress or manner.

Japanese cities hum and sparkle; Singapore takes on the feel of a European city; Taipei turns middle-class—but Chinese cities, even vaunted Peking, are left behind. They are backwaters of semi-industrialization, where neither beauty nor prosperity can be found. They are the strangled fiefdoms of a political and military elite, in which the role of the citizenry is to gaze up dumbly and humbly at the one thing that glitters—the Leviathan, the edifice of state power.

It is a small mercy that a recent courtesy drive in the name of “social public morality” has made Peking less dirty and crude. People don’t spit in the street as much. One’s chances of getting on a bus at peak hour without being knocked

down have improved. Shop assistants occasionally remember not to be surly.

In Wang Fu Jing, Peking’s main shopping street, a knot of people carrying plastic bags of purchases gathered around a tall young factory worker one afternoon last November. He looked harassed. Someone had seen him spit on the sidewalk. Social pressure rose against him. With a friend of mine, also a factory worker, I watched from a distance. Two female public-health officials broke through the knot of pedestrians, pulling out their receipt books, brisk and self-satisfied like American meter-maids.

The factory worker, remonstrating that his act was a tiny slip, never to be repeated, in a tone that grew less assertive as the crowd swelled, lost the argument. “Five mao” (about a quarter), snapped one of the hygiene-maids, as she wrote out a receipt for the fine. He handed over five grubby one-mao notes with a restrained curse. The crowd dispersed, murmuring its satisfaction.

The courtesy drive is based on that old set of values that communism was supposed to have swept into the rubbish bin of history: Confucianism. Since it became clear that the warm glow of Communist enthusiasm has vanished from the Chinese body social, the government has begun to inject Confucian moral rules (forget self, do everything for the common good, treat the elderly with kindness) in order to improve social moral health.

WHETHER OR NOT Confucianism can take fresh root, there is no doubt that a vacuum of ideals exists. No one talks about ideology anymore. The decline of Marxist belief has gone far beyond the state of affairs in the first three years after Mao’s death. From late 1976 until 1979, there was a pushing off of the mask of ideology, a busy denunciation of the evils and stupidities of late Maoism and an exhilaration at looking at the world on its own terms rather than in terms of class analysis. In 1983, one sees on all sides boredom, cynicism, and escapism.

Students care only about their careers, and they early set about pleasing the teachers and administrators who control their future. (Jobs are “distributed”—there is virtually no individual choice.) Corruption spreads as relative; and friends help each other avoid playing by the rules, laughing at their success against a system that has made man;

people bitter and depressed. When the managers of a factory order component parts from another factory, they do not merely wait for the order to be fulfilled; they must arrange banquets for the second factory, and bestow gifts on the family members of its managers.

All of this seems to make China less exotic. It is as if the Chinese have joined the rest of the human race—and disappointed those who judged China morally special. Cynicism, self-interest, and corruption are less remarkable, less “Chinese,” than the ideological fanaticism that used to intrigue the visitor. China is less ennobling, and a bit less inscrutable, than in Mao’s day. But we are in no position to blame the Chinese for their loss of political faith and their new concern for individual self-protection. Under Mao, the Chinese nation “stood up”; now the individual seeks to stand up and gain his inch of space in the sun.

Communist officials feel that young people in particular have to be stretched across some framework of civic-mindedness. Hence the revival of Confucianism (though it is not called that) to promote hierarchy, filiality, care for the common good, and above all *obedience*.

“Two things we in the States ought to learn from this place,” said a southern conservative on a cruise ship that had just visited several Chinese ports. “Their principle ‘If you don’t work, you don’t eat,’ and their idea that if a person commits a capital crime, instead of messing around with the courts, you shoot him straightaway.” These are not the sort of lessons Americans used to extract from China, but the southern conservative, regardless of whether or not one agrees with his values, had a correct impression of China. It is a tough, cut-throat society: ruthless laws cow the individual; sentiment counts for little.

The southerner was looking not to China as an abstraction, as virtually all American observers were a decade and more ago, but to aspects of the real face of China.

INSTEAD OF POLITICS, people talk about prices, wages, and bonuses. When I first started visiting China, “Serve the People” was an admonition to selfless work for the public good. Now it’s a commercial slogan, like Avis’s “We try harder” (to get your dollar). Serve the People *and do well for yourself*. The slogan means keep the shops open longer hours, smile at the customer so he’ll



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China is a wonderful country to visit—art, cuisine, history, geographic diversity, sheer organizational gigantism, all have their appeal—but many Western tourists do not like China's new commercialism. "I took this trip because China is supposed to be different from Europe," a Danish woman complained last November, as she gazed at the "Marco Polo" souvenir and photo shops that dot the beautiful Temple of Heaven like a rash.

The Japanese tourist industry has not thrown away all dignity like this. Nor have those of Burma and Thailand, among Asia's less-developed countries. It is not China's abrupt swing from politics to economics in itself that is troubling but the crudeness with which the new goals are pursued.

China as a nation grows formidable, even economically. It has the world's sixth-largest GNP, and the annual rate of GNP growth is a respectable 4 to 5 percent. The villages in particular are doing better than they have for years, thanks to a partial dismantling of collectivism. The country is rich in oil, coal, and an array of valuable minerals. Yet the expectations of the individual are growing faster than the capacity of the system to meet them. We in the West have known for years that Taiwan, with 17 million people, has more telephones than China, which has sixty times more people; that a two-block swath of Manhattan contains more Telex machines than the whole of China. But now many of the Chinese people know these things. They resent the contrast, and expect the gap to be speedily bridged.

Per capita income is now about \$350. The government is aiming—ambitiously—for \$1,000 by the year 2000. By then, even that figure will be but a fraction of the per capita income of Taiwan or Singapore. The problem is that there are almost twice as many people in China as there were in 1949. Despite the growth of the Chinese economy, per capita GNP only inches ahead. In a nation where 80 percent of the people are in villages, land use per capita has gone *down* nearly one half since 1949.

A decade ago, when China's stated goals were abstract ("Carry revolution to the end . . ."), who could say whether they were attainable or not? Maoism could still seem new and different; from outside the world of its values (as I was),

it was very difficult to assess its chances of doing what it said it would do. Now that Peking has set a concrete goal of catching up with other countries economically, it becomes less impossible to assess China's prospects—and clearer, alas, that a gulf will yawn between hope and performance.

The regime has learned the flaws of central planning, but cannot opt for a market economy. The bureaucrats speak of "economic autonomy," but there is no such thing in a system where, for example, the central ministries insist on fixing prices. "Market forces" are invoked. But the Communists cannot sit back and watch the small but successful free segment of the economy eclipse the large, lagging planned segment—their political power might not survive the severe cutting back of state ownership.

"One in ten may defect," Deng Xiaoping, China's senior leader, said several years ago when defending a new plan to send students to study in the U.S. "That doesn't matter." Late in 1982, the thousandth Chinese seeking to stay on in the U.S. sent his application to the State Department. Now Deng worries. He is less confident of the students than he used to be. Urban young people are not as a group convinced that Deng's reforms will really make China "modern" and "democratic."

"Why is there such a lack of ability in East Europe?" Zhou Enlai asked some Australian visitors in the summer of 1971. He gave his own answer: "Because the minds of the East Europeans are not their own, they're not independent, they're controlled by Russia." Zhou had a point; but what about China?

University graduates in scientific and technical jobs in Shanghai were recently given an exam, at high school level, with time to prepare, in their own subjects; 68 percent failed in math, 70 percent failed in physics, 76 percent failed in chemistry. No one familiar with Chinese industrial and bureaucratic performance would be much surprised at these figures. "Sackings in Tianjin," shouted the headline in *People's Daily* last fall. Could it be that the criteria of ability and performance are making a timid appearance in Chinese organizations? No. The big story was built on a small foundation: *two* workers (in a city of 7.7 million) were fired after it had been painstakingly established that they had not reported to work for eighteen months.

Performance lags because motivation

is lacking. The aging Chinese leaders are losing the fruits of the young people's talents by failing to provide incentives, give young people room to shape their own lives, and allow them to make their own mistakes and learn from them.

I was one of the Australians to whom Zhou gave his dim view of Eastern Europe. Like my companions, including Gough Whitlam, later the prime minister of Australia, I thought the Chinese premier had a good point; yet I did not apply it to China. It wasn't only Zhou's charm that made us suspend judgment about China's authoritarianism. In 1971, we knew much less about conditions in China than we do today. We were just discovering the simple shape of Chinese society, after two decades of ignorance. Gathering material for my book *800,000,000*, I had many interesting and even candid talks with officials, but I had very few substantial talks with people who were not dealing with me as officials. By contrast, much of my time in China in recent years has been spent listening to unofficial voices—speaking at length, in Chinese, on repeated occasions, and without being monitored by the authorities. The result is a picture of conditions that makes even the frank words of official China—and they are franker than they used to be—seem only a small part of the truth.

That evening with Zhou Enlai, too, one tended to suspend critical judgment, because the "China issue" was then one not of social philosophy but of peace and war. Fighting raged in Vietnam, Peking was not in the United Nations, Kissinger had not made his first secret trip to see Zhou, China had not been "recognized," and fear was widespread that the U.S. and China might fight a war in or over Indochina. We focused on Peking's view of Russia and Taiwan rather than on its view of human rights; on China-Vietnam relations more than on relations between the Chinese government and the Chinese people.

Today, we take it for granted that the U.S. is at peace in the Far East. We laugh at the idea that China could be a threat to us, and we know that the Chinese do not fear us.

IN SHANGHAI, A poster keeps turning up in offices, restaurants, homes: an artist's impression (done under political guidance) of Shanghai's future. It looks like a cross between an ad for a science-fiction movie and an ideal city as drawn

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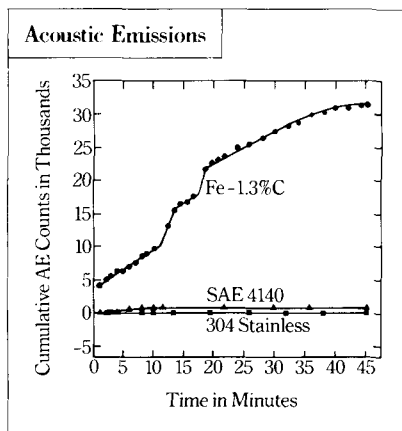
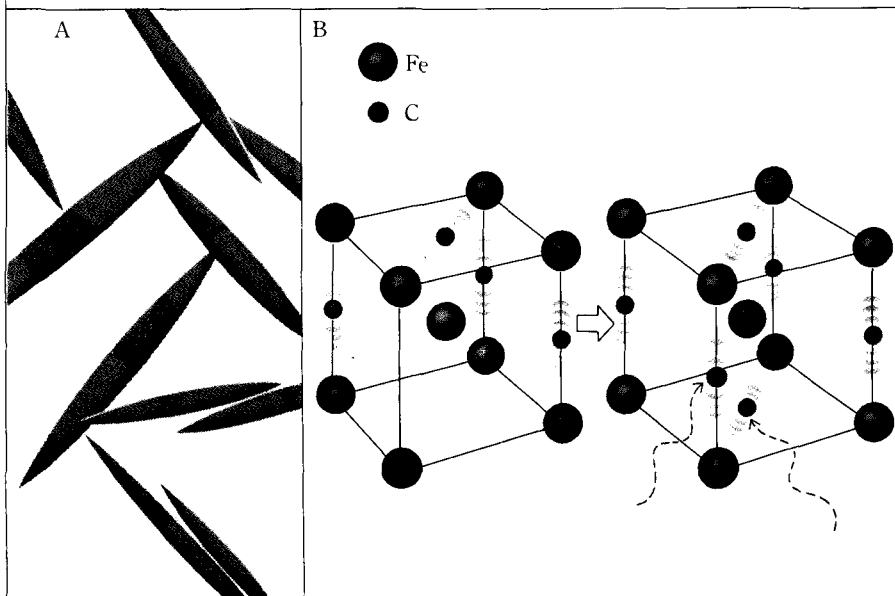


Figure 1: Cumulative acoustic emission counts for Fe-1.3%C steel, and control specimens of SAE 4140 and 304 stainless steel.

Figure 2: Artist's rendering of two proposed sources of microcracking: (A) impingement of the plates during the formation of martensite and (B) carbon atom rearrangement during the aging of martensite.



MARTENSITE is a hard microconstituent of steel which forms when austenite, iron containing carbon in solid solution, is quenched from a high temperature. The martensitic transformation produces steel that is hard and strong, but non-ductile. Through heat treatment, the steel can be tailored to applications requiring different degrees of ductility. High-carbon martensite—a highly stressed microstructure with a plate-like morphology—contains microscopic ruptures or separations 10 to 20 microns in length. These structural discontinuities, termed “microcracks,” influence the mechanical properties of steel.

Although aspects of the microcracking phenomenon have

been understood by metallurgists for more than fifty years, there is still no definitive explanation for when or how it occurs. An engineer at the General Motors Research Laboratories has devised an experiment that detects the microcracks as they occur.

The elastic energy released when microcracks form should produce a stress wave and associated high-frequency acoustic emission (AE). Using a piezoelectric transducer as the monitoring device, Dr. Michael Shea set out to determine what could be learned about the microcracking process by measuring AE.

The more widely accepted of two current hypotheses—the “impingement model”—asserts that microcracking is transformation-induced, taking place due to the collision of martensite plates during the quench. The other model maintains that microcracking occurs during the aging of martensite after the plates have already formed. The “aging model” suggests that thermal activation enables carbon atoms to rearrange themselves, producing localized stresses high enough to cause microcracking. Dr. Shea’s ongoing research into high-carbon martensite led him to believe that the aging hypothesis was important. He proceeded to determine if AE is produced during aging.

For his study, Dr. Shea chose Fe-1.3%C steel, which undergoes martensitic transformation during quenching and is known to form

microcracks. To provide baseline data, control specimens of 304 stainless steel and SAE 4140 steel were put through the same procedures as the test composition. When quenched, 304 stainless steel produces no martensite, and SAE 4140 forms a low-carbon martensite which has a lath-type morphology, and generally does not microcrack.

SPECIMENS of the three compositions were quenched to -196°C and then slowly heated to room temperature. Acoustic measurements were made beginning at 0°C , at which point carbon atom mobility is sufficient to allow rearrangement processes to take place, and continued for 45 minutes after the specimens had reached room temperature. No AE was recorded for 304 stainless steel, and only a slight amount for SAE 4140. Significant emission, however, was measured for the Fe-1.3%C steel specimen during the entire testing period (see Figure 1). Since martensite had already formed during the quench, these results support the hypothesis that microcracking is produced during aging of the freshly-formed plates. Dr. Shea ruled out both slip and twinning as sources of AE since the literature indicates that neither factor is significant during aging of martensite below 40°C . The possibility that the AE resulted from isothermal transformation of austenite to martensite could also be excluded

because this process does not take place in the composition studied.

"These results demonstrate conclusively," says Dr. Shea, "that microcracking occurs during the aging of high-carbon martensite, thereby providing support for the less accepted of the two models.

"The next challenge," he continues, "will be to quantify the relative contributions of both models—impingement and aging—in an effort to determine which, in fact, is the more important mechanism, thus furthering our understanding of microcrack formation. Then, perhaps, we can more systematically explore ways to minimize microcracking."

General Motors

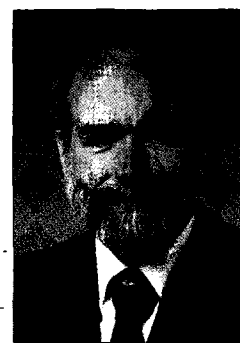


THE MAN BEHIND THE WORK

Dr. Michael Shea is a Staff Research Engineer in the Metallurgy Department at the General Motors Research Laboratories.

Dr. Shea received his undergraduate and graduate degrees in metallurgical engineering from Michigan Technological University, and his Ph.D. in materials engineering from Rensselaer Polytechnic Institute. His thesis concerned deformation and fracture of cesium chloride type superlattices. He joined General Motors in 1971.

The areas of metallurgical research pursued by Dr. Shea at General Motors include the mechanical properties of high-carbon steels, mechanically-induced transformation of austenite, and structure/property relationships in nodular cast iron. His exploration of the microcracking phenomenon in martensite was conducted with the help of instrumentation developed by GM colleague Dr. Douglas Harvey.



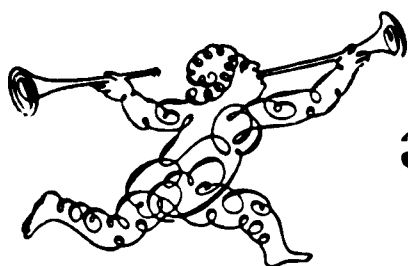
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by a child with a bent for engineering. Planes, spaceships, helicopters, swarm overhead. Ingenious vehicles fill the numerous freeways (one sees no parking lots). Bridges and overpasses truss the place. Skyscrapers stretch into a sky that unaccountably remains a brilliant blue. The people—the few people visible amid the man-made wonders—all smile.

In Peking's attractive Sun Yat-sen Park, I watched a Sunday crowd of citizens lining up for the privilege of having their photos taken against a Toyota as backdrop. The park authority, which means the government, provides the car, together with a display of suggested poses on or near this trophy of Japanese modernity. A fee is charged to cover the park photographer's work and recoup the investment in the Toyota. A car that has never been driven an inch inspires the dreams of a million Chinese.

I left Sun Yat-sen Park wondering what Mao would make of the Toyota-worship, and sat on a balustrade of the Gate of Heavenly Peace with a copy of the *Peking Evening News*. There was a cartoon about a Chinese woman and a Japanese man who meet in a Chinese port. In the first frame she is shown in a T-shirt bearing the huge English words "KISS ME." The Japanese man wears a T-shirt made out of a bag that had held chemical fertilizer (a product China imports from Japan). In the second frame, the Japanese jumps on the Chinese woman as if to rape her. She cries out in resistance. "But look at what's written on your T-shirt," says the Japanese.

The Toyota and the cartoon are symbols of two clashing forces within the Chinese psyche at present. One is left with the impression that China doesn't know what it really wants, now that so many past goals and values have been rejected. Influential Chinese seem embarrassed about their yearning for prosperity. They fear they may look silly if they fail to bring it off. They prepare an avenue of retreat—to the quagmire of culturalistic nationalism.

"Make the past serve the present, make foreign things serve China," it was said during Mao's ideological dictatorship, and it is still said during Deng Xiaoping's pragmatic dictatorship. A ton of concepts, an ounce of action. The repetition of the slogan seems to betray an inability to effect these syntheses. The Chinese mock their past as feudal refuse; the next moment they boast that no other nation has such a long and brilliant

past. A balance eludes them. The same with "foreign things": they go head over heels for them; later they curse what they adored. It is the Japanese who—without preaching about the concept—quietly make "the past serve the present" (Buddhism, the kimono) and "foreign things serve Japan" (Christmas, the U.S. nuclear umbrella). China can't do it, but talks about it.

IT IS A WELCOME improvement that China has opened its doors a bit to the outside world. When I went to China in 1964, you could count the visitors to most Chinese cities each month on the fingers of one hand. Last year, more than one million tourists came. U.S., Japanese, and European banks and firms have opened offices and even plants in Peking and Shanghai. China borrows money abroad, accepts foreign advertising, and has set up export zones in which the usual industrial rules are disregarded in order to accommodate the foreign entrepreneur. Some \$3 billion worth of joint ventures between Chinese and foreign firms are in process.

Foreign books, languages, films, and TV are making a modest impact. "The main thing that's happened since your last visit is the American film festival," said a young friend in Tianjin. She remembered the English names of the movies as if they were the names of adored foreign boyfriends: *Snow White and the Seven Dwarfs*, *Shane*, *Singin' in the Rain*, *Black Stallion*, *Guess Who's Coming to Dinner?* "The dancing in *Singin' in the Rain* just drove us crazy." China, "the model" for others, has become a China shopping around for ideas from others.

All this foreign influence is making the Chinese cities socially and culturally less monotone. The reverse process, as Chinese students and delegations fan out across the U.S., is heavily responsible for a demystification of China among us. Nothing has done more since 1980 to fuel my doubts about China's prospects of meeting its chosen goals than my constant contact with young Chinese in Boston and in cities around the U.S. where I go to lecture.

Despite the new intensity of traffic between China and the rest of the world, the Chinese, especially Communist officials, are still awkward or uneasy in many of their dealings with non-Chinese. 'Fang Fang' was not a good name for the export line of lipstick that Shanghai

began with a flourish to try to market in the West. Nor was "White Elephant" a shrewd choice for batteries, or "Pansy" for men's underwear. Chinese Communist business gaucherie (the capitalist Chinese of Southeast Asia, by contrast, know the Western markets quite well) is not limited to trifles. Foreign businessmen are driven mad by the Chinese bureaucracy. Lately, Chinese avarice has also infuriated many traders.

The Police Ministry views every foreign resident in China as an embryonic spy. Ordinary Chinese are routinely harassed if they have sustained contact with a foreigner. In their hearts, many Chinese oscillate between the unhealthy extremes of disdain for the foreigner and near-worship of him. Facing the West today, the Chinese are well aware that they are the weaker, backward side. But deep down they consider this a shocking, unnatural, and temporary state of affairs. The near-worship is a panicky response; the tranquil smiles are a tactic to hide the disdain.

The suspicion of the foreigner, in an era when Americans have with high hopes begun to have more contact with the Chinese than since the 1940s, is responsible for some of the current disenchantment with China. The foreign researcher is met with barely concealed anxiety when he starts asking questions. Friendship between a Chinese and a Westerner is generally assumed to proceed from an ulterior motive.

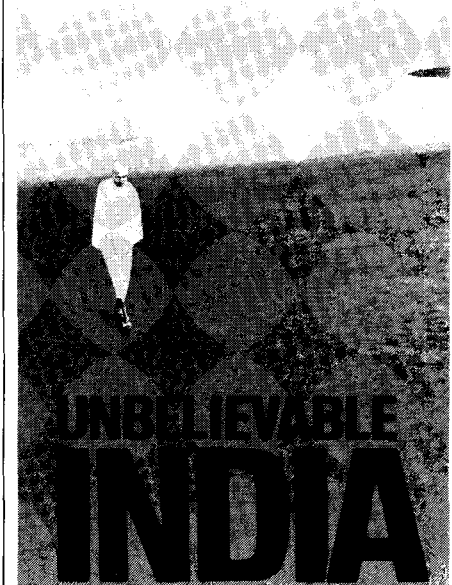
Compared with the expectations of solidarity that were common during the "days of discovery of China," in the early 1970s, the mood today among the businessmen, diplomats, and intellectuals who deal closely with the Chinese is tinged with reluctant acknowledgment of the realism in Kipling's line "East is East, and West is West. . . ."

THE RETURN OF Confucianism and the intensification of nationalism (in each case labeled socialism) are linked. They both replace Communist faith. And they are both called into service by China's urgent efforts to become prosperous. Confucianism is intended to strengthen industrial and social discipline. Nationalism could provide the music, sets, and costumes for China's fall-back scenario if prosperity should fail to come. Being poor would be no obstacle to shouting for the return of Taiwan and Hong Kong to the breast of the proprietorial, if bankrupt, motherland.

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—MAHATMA GANDHI

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But aren't Confucianism and nationalism the creeds of Taiwan? And hasn't Taiwan, a place of terrible repression in the early 1950s, been rendered substantially freer by twenty-five years of impressive economic growth? Yes, and the Peking leaders have pounced upon the lessons. But the GNP of China, a huge country, cannot grow at the speed of Taiwan's. Even more important, Taiwan's economic success has been a capitalist economic success; the decline of repression has taken place within the environment of free enterprise. So it was, too, in European history. The institutions of a free society—parliament, press, political parties, constitutions—came with capitalism. By contrast, these institutions have never sprouted and flourished under a Leninist dictatorship. I do not see China as an exception.

Implicitly, I used to presume that China could be one. Its culture seemed capable of digesting Marxism and moving on; the enmity between China and Russia made me think China might irrevocably reject Stalinism; I felt that Chinese ingenuity might somehow push through the straitjacket of a Communist political system.

My two most recent books, *The Future of China* and *Mao*, speak of the immovability of the Leninist system, and yet it is curious that people tenaciously go on reading 800,000,000, eleven years after it was written, and embarrass me by liking it. I think this is because Americans are interested in the culture of China, not its political system. Few people want you to tell them about the repressiveness of Communist dictatorship; that is not the China that intrigues them. As I write these lines, the president of Pepsi-Cola pleads on the *New York Times* op-ed page for less-restricted trade with the Russians. No one has to argue for acceptance of trade with China. That is not because China is less repressive than Russia; it is because China does not threaten us, and because Americans think of China as a culture (exotic) rather than as a polity (dictatorial).

Yet, for the billion who live there, as distinct from the foreign tourist, businessman, or journalist, China is first and foremost a repressive regime. The unchanging key to all Peking's policies is that the nation is ruled by a Leninist dictatorship that intends to remain such.

Words from the end of John Stuart Mill's *On Liberty* have haunted me dur-

ing my four most recent trips to China. "The worth of a State, in the long run, is the worth of the individuals composing it. . . ." Many Chinese feel themselves to be cogs in a machine of Communist power that grinds on for its own purposes. They assume an immense gulf between state and people. "A State which dwarfs its men," Mill goes on, "in order that they may be more docile instruments in its hands even for beneficial purposes, will find that with small men no great thing can really be accomplished. . . ."

To be fair, the problem of governing an overpopulated China gripped by higher expectations than ever before in its history would be all but insoluble to any regime, Communist or not. The Nationalists have found it enormously easier to look good in ruling Taiwan than they did in ruling the mainland from 1928 to 1949. Most close students of China would probably agree that a form of authoritarianism is unavoidable in the present phase of Chinese history (one notes that of the other three Chinese societies in the world—Taiwan, Singapore, and Hong Kong—two are under one-party rule and the third is run by the British police). Still, there is a difference between an authoritarianism in which those many things that are not forbidden are permitted (Taiwan) and a totalitarianism where those few things that are not forbidden are compulsory (China).

Nice words float around Peking like balloons at a festival—democracy, rule of law, socialist morality—yet they do not touch the real issue (which events in Poland have also raised). The alternative to the Leninist system, the only goal of true political reform, in China as in Poland, is pluralism.

Political pluralism—which would mean an acknowledgment that conflict is endemic to political life, and should be allowed institutionally, and which would bring an end to the Communist Party's monopoly of power—is further away in China than in Poland, and hardly closer than in the Mao era.

These past six years, the postmortem on China's intermittent troubles since the late 1950s has moved its target from Mao's widow and her three Shanghai associates (Gang of Four) to the role of Mao in the Gang's ultra-leftism (Gang of Five?) to the system that Mao built (Leninist dictatorship of the proletariat). But the Peking leaders will abort this third stage of the probe, however logical

it may be. Very few people saw off the branch they sit upon; no ruling Communist Party has ever done so. It is one thing to say (as Peking does) that "the Party has made mistakes." It is another thing to say, as many Chinese say privately but no official would say publicly, that "the Leninist system is no good."

It is safe, now, to lambaste the "leftism" of the Gang of Four. But it touches the Peking Communists' nerve to write, as I did after the Gang fell, "As long as the Gang of Four are made to carry the weight of all China's evils and conflicts, Chinese politics will not be free from its feudal overtones, its Peking opera unreality." Politics is still theater in post-Mao China, and it will remain theater as long as there is no freedom to form an opposition, publish dissenting magazines, or even put up a wall poster denouncing Deng Xiaoping.

One guesses that China under its Leninist party will lumber on, doing well enough to avoid the collapse of its system while being unable to satisfy the people's full economic aspirations because of the rigidities of the system. The post-Mao regime has shrewdly conciliated the farmers by giving them more economic freedom and paying them higher prices for their goods (at a cost of 6.5 percent of GNP in subsidies), and one must admit that this does more for China's short-term stability than any number of liberal reforms would do. But pluralism will have to wait for another century. As a result, comprehensive modernization, which Mao wanted but did not know how to achieve, and which his successors now urgently summon, may not come for Deng much more than it came for Mao.

If the picture is fairly bleak, this doesn't mean that China and the U.S. need become enemies again. One reason why the American public has been indulgent with the Peking regime—more so than with the Warsaw regime—is guilt about the excessive anti-Chinese feelings prior to 1970. Another is that Americans tend, more than most foreigners, to take Chinese theater as Chinese reality. The Chinese craftily try to hide as much as possible about their society from the foreign eye, and the tools they use (good food in an atmosphere of ritual; paternalistic hospitality; a stress upon cultural wonders as a diversion) are disarming and widely effective. Americans have also given China the benefit of many doubts because it does

not threaten us as Russia does—it has virtually no severe conflict of interest with us (except over Taiwan)—and because a stable, strong China is more in American interests than a crumbling, failed China.

These truths, which Nixon grasped in 1970, are still true, and China's shabbiness as a society does not make them less so. For some time to come, we may have to accept that China is fairly stable and repressive, useful to the U.S. and an arena of human frustration. Another bout of extreme hostility and pessimism about China would serve us ill.

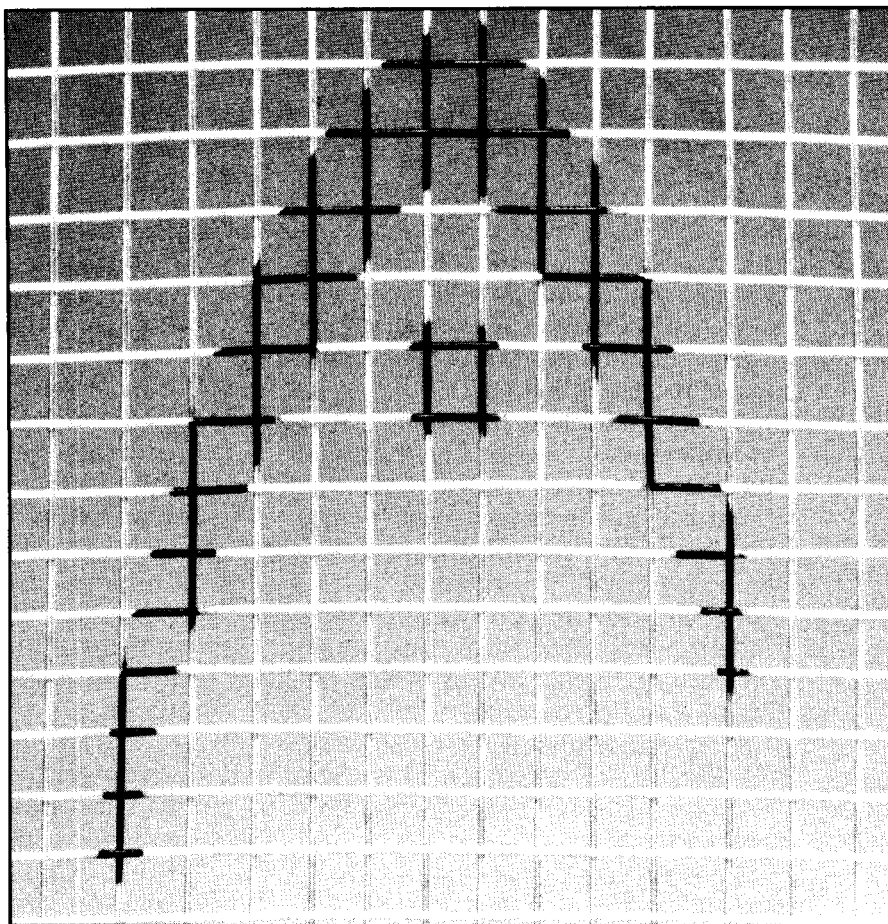
IN SHANGHAI, I went to see my friend Wang, a construction worker. I like to talk with him about life in Shanghai, and about Hong Kong, where he has relatives. Climbing the tiny wooden stairs to his apartment, I found only his parents, with whom Wang and his two sisters live in one and a half decrepit rooms, sharing a kitchen and a bathroom with two other families. The father said he would tell Wang I was in town. "Come back tomorrow at noon, for our son will certainly take the day off to see you." I drank a cup of tea, resting it on a gasping radio, 1950s vintage, then left.

The next day, Wang was waiting for me, and we went off to lunch. To take the day off, he rose at 6 A.M. and took a bus at 6:30 for the ninety-minute ride to his plant. It took an hour in the plant office to apply in person for the leave, as one must do. He caught the 10:30 bus for the return trip, and got home just in time to change and keep our appointment. Had I let him pay for our outing, as he wished to do, the cost would have been more than half his monthly wage of thirty-eight yuan (about \$22).

After lunch, we went swimming at a pool in the former French Club. "As for Hong Kong," Wang said in the privacy of the locker room, "if China ever gets control of it, the world will see the horror and chaos of another 'Saigon 1975.'" I fell silent. Not because I doubted him. Recalling the buoyancy and prosperity of Hong Kong, I was lost in contemplating how sad it would be if the regime that grinds down Wang and millions like him should presume to reclaim Hong Kong.

—Ross Terrill

Ross Terrill, a contributing editor of The Atlantic, has written many books on China. His biography of Mao's widow, Jiang Qing, will be published by Morrow early next year.



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Our Failing Schools

A battle for the future is being waged in the classrooms of the world—and America is losing.

Science and math, once the backbone of American education, have become its soft underbelly. Half the newly hired science and math teachers are unqualified to teach those subjects; they do so only with emergency certification. Only one-third of our high schools offer more than one year of math or science. At least half of all high school graduates never had a single year of chemistry or physics. Almost half of our states do not require a single math or science course before graduation.

Five million Soviet high school students take calculus compared with barely more than 100,000 in the U.S. Japan graduates more engineers than the U.S. Nearly half of the engineering doctorates that are awarded in the U.S. go to foreign nationals. In China, more people study English than speak it in the U.S. Through foreign language study, others gain know-how from us. Because of our lack of study, we cannot gain from them.

American students do not work as hard as their foreign counterparts. Our school year is 180 days long. In Japan, East Germany, China and the Soviet Union, the school year averages 240 days. Our children attend classes about five hours a day, five days a week. In

other countries, the school days and weeks are much longer.

We are feeding our children the intellectual equivalent of junk food while others dine on gourmet cuisine. The results of this educational diet show. More than 10% of the Japanese have I.Q.s above 130. Only 2% of Americans have I.Q.s above 130.

A generation of Americans is growing up lacking the education needed to participate in the modern world. It's a world of robotics, optical fibers, silicon chips, and CAD/CAM (computer-aided design/computer-aided manufacture). Those who do not understand these things will be left behind. Countries that do not lead will have to follow.

Creating jobs, increasing living standards, improving productivity, defending our national security—all pivot on technology. Other countries recognize the importance of science, math, and foreign languages. Yet, at a time when technology is shaping the future, American education is producing technological illiterates.

Historians of the future may well look back on what has happened to American education as the equivalent of unilateral economic disarmament. Our educational deficiencies must be remedied, lest we find ourselves becoming a second-rate economic power.



A battle in the holy war over arms control

THE ORDEAL OF KENNETH ADELMAN

BY JAMES FALLOWS

LAST JANUARY 12, A Wednesday morning, Kenneth Lee Adelman arrived late at his office at the United Nations, in New York, where he was the U.S. deputy representative. Adelman, a sturdy man of medium height with curly brown hair and a thick moustache, had been having breakfast that morning at the Carlyle Hotel with a friend.

The friend was James Chace, the managing editor of *Foreign Affairs*. Adelman had many such friends from the world of letters and ideas. Although Adelman, then thirty-six, had spent most of his career in the government or on its periphery, his dream was to soar into the ether of the intellectual life. He enjoyed seeking out writers and offering line-by-line explanations of their latest work. Magazine editors knew him as a brimming fount of article proposals. He took great satisfaction from his involvement with the Lehrman Institute, in New York, where every month or two he would join a dozen other academics, journalists, and intellectuals for three hours of argument about an essay one of the participants had submitted. He had taught a course on Shakespeare at Georgetown University, in Washington, and had written an article for *Harper's* comparing Julius Nyerere, of Tanzania, to Richard II. He was a Sherlock Holmes buff and had contributed to the *Baker Street Journal*. He smoked a pipe, dressed in clothes that looked comfortable rather than stylish, and wore a Holmesian deerstalker cap.

He seemed openly, even innocently, friendly. Many of his friendships proved to be professionally expedient, but he did not play them against each other, nor drop a friend when the connection ceased to be handy. He was generous with his time and praise. He seemed to lack the capacity



for cunning or duplicity. As a result, his ambition was perfectly plain.

While many men involved in politics yearned to be written about, Adelman yearned to write. Through his writing, he hoped to become known for his intellectual honesty, his willingness to puncture hypocrisy, his ability to present the truth in a fresh and compelling voice. He had been writing for newspapers and magazines since shortly after leaving college, but he began to establish his name in the late seventies, when he identified himself more clearly with conservative political views. He wrote about foreign policy for conservative journals and became one of conservatism's promising young men.

Adelman had no natural affinity with conservative forces of the New Right, who were of southern and western populist origins and stressed a fundamentalist-Christian point of view. But he was entirely at home among the neo-conservatives, the urban, educated, largely Jewish branch of the movement, whose members believed that intellectual courage and proficiency in the battle of ideas were their special strengths.

Adelman knew everyone who was anyone in this movement, especially those a generation older than himself. He worked for one such figure: Jeane Kirkpatrick, the permanent representative to the UN. Adelman had served as her deputy since August of 1981, reinforcing her in the war of ideas against the regnant hypocrisies of international diplomacy.

On January 11, the very evening before his breakfast with Chace, he had a long talk with another neo-conservative leader: Eugene Rostow, former dean of the Yale Law School, former undersecretary of state in the Johnson Administration, exemplar of the mainstream Democrats who

James Fallows is Washington editor of The Atlantic.

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felt themselves betrayed by their party's nominees in 1972 and 1976 and who had swung to the Republican Party in 1980. In the Reagan Administration, Rostow was the director of the Arms Control and Disarmament Agency, known as ACDA. In the contrast between Rostow and Paul Warnke, Jimmy Carter's first ACDA director, conservatives saw the same message conveyed by the contrast between Jeane Kirkpatrick and her counterpart under Carter, Andrew Young. In place of squeamishness was resolve; in place of apology, self-confidence. Tough-mindedness about American values and American interests had at last replaced mushy romanticism about international harmony and the Third World.

That evening, Rostow and Adelman talked about the seemingly endless war between Iraq and Iran. They also traded bureaucratic gossip. Rostow had recently lost a power struggle within the Administration, which left him without a deputy director at ACDA. He had heard rumors that Adelman might be in line to fill the vacancy. Rostow said that if Adelman was interested in the job, he wished he had known about it sooner. After all, as both men remembered, Rostow had tried to interest Adelman in the deputy's job two years earlier, at the start of the Reagan Administration.

Adelman thanked him, sincerely; he said that Rostow's confidence meant the world to him. But he had not been interested in the ACDA job at the beginning of the Administration, and he was not interested now. It was too much fun doing what he was doing at the UN. They agreed that the politics of arms control and of ACDA were turbulent; Rostow said he had an appointment with George Shultz, the secretary of state, in Washington the next day. That should iron things out, he said.

When Adelman reached his office the next morning, he found it in uproar. White House telephone operators had been scouring the city for him. William Clark, the President's national security adviser, had made an urgent request to talk with him. When Clark came on the phone, he told Adelman he wanted to talk about ACDA. Thinking that Clark, like Rostow, was talking about the deputy directorship, Adelman began to explain why he wasn't interested. Clark cut him off. You don't understand, he said. We're talking about the director's job.

The irony of the previous evening's conversation was quickly apparent to Adelman. What, exactly, was Rostow going to "iron out"? Adelman deduced that he was learning Rostow's fate before Rostow himself knew. As he expressed his surprise to Clark, and fumbled to cope with the news, Clark told him that the President wanted to announce his appointment that afternoon, along with Rostow's dismissal. So the President needed an answer now. Adelman said yes, called his wife and several close friends, and wondered how long he should wait before trying to contact his old friend Gene Rostow.

Thus began the three-month ordeal of Kenneth Adelman.

PRESIDENTIAL NOMINATIONS USUALLY SAIL THROUGH the Senate. In the past twenty-five years, the Senate has approved more than a million and a half nominations and rejected only three. They were Clement Haynsworth and G. Harrold Carswell, Richard Nixon's nominees for the Supreme Court in 1969 and 1970, and Lewis Strauss, Dwight Eisenhower's nominee as secretary of commerce in 1959.

The vast majority of successful candidates are those approved en bloc for routine military and foreign-service promotions. For instance, on the same day it began debating the Adelman nomination, the Senate received, for its "consideration," some 4,000 military nominees, whose names filled fourteen pages of single-spaced, multi-column type in the *Congressional Record*.

Even when nominees to prominent positions are considered, confirmation disputes are so rare that they are easily remembered. Before Kenneth Adelman, the only Reagan nominee to receive an unfavorable vote from a Senate committee was Ernest Lefever, the President's original candidate for assistant secretary of state for human rights and humanitarian affairs. He withdrew before the full Senate could consider his case. Before Adelman, only twelve nominees in the twentieth century had come up for Senate consideration after a negative committee vote. (A committee can kill or indefinitely delay a nomination, by refusing to report it to the full Senate. A less dramatic and less confrontational step is to report the nomination to the Senate, but with a recommendation that it not be confirmed.)

In most of the cases where nominees have gotten in trouble, the underlying political issues have been polarized, emotional, unforgiving of halfway views. The underlying issue in the Adelman nomination was the control of nuclear weapons, which meant that Kenneth Adelman was walking into the middle of a holy war.

IN 1963, THE UNITED STATES AND THE SOVIET UNION signed the Limited Test-Ban Treaty, which prohibited tests of nuclear weapons in the atmosphere, under water, and in space. In 1972, Richard Nixon and Leonid Brezhnev signed the first Strategic Arms Limitation Treaty, SALT I, which had two parts. One set limits on strategic nuclear forces, those designed for attack; the other restricted further development of anti-ballistic-missile systems, or ABMs, which are intended to shoot down incoming warheads. In 1979, Jimmy Carter and Brezhnev signed the successor agreement, SALT II, which extended the limitations, in greater detail, to different categories of weapons, although it did not require overall reductions in either side's nuclear force. In 1980, after the invasion of Afghanistan, Carter gave up on ratification of the SALT II agreement, bowing to the general view that it could not get the two-thirds vote necessary in the Senate.

The modern history of arms control is contained by these dates. On that, but little else, the two major camps

in today's arms-control disputes agree. From their different interpretations of these past negotiations have grown doctrinal conflicts of religious ferocity and abstraction. Ferocity because partisans of each view believe that their opponents endanger the survival of the United States, indeed of human society. And abstraction because no one has seen a nuclear war, and neither side can prove its contentions about how such a war might start until it is too late.

One of the arms-control camps is made up of liberals. Its members would resist that label and instead describe themselves simply as being "committed to arms control." They are convinced that the unbroken chain of arms negotiations, stretching back more than twenty years, has helped pull great-power relations back from the precipice toward which they constantly veer. They often talk about "the process," as in "We must keep the process going." They mean that through all the frustrations of U.S.-Soviet relations, despite the shortcomings of specific treaties, both the Soviet Union and the United States are better off because they have kept on talking with each other. From the constant, patient search for small areas of agreement come the underpinnings of larger agreements, and the bulwark against war.

The historical metaphor most popular among the liberals is the summer of 1914, when the great powers drifted witlessly into war. War came, in this view, not because of irreconcilable conflicts but because no one was able to stop the warward momentum of rhetoric, weaponry, and national bureaucracies.

Their other cherished metaphor is "letting the genie out of the bottle." Arms negotiations are seen as a race against disaster, the vision and courage of statesmen ever challenged by the ingenuity of the technicians, who might produce the "destabilizing" breakthrough that would upset the deterrent balance.

The liberals have a classic cautionary example of what can happen when the statesmen lose the race. The first SALT negotiations failed in one significant way: they did not prohibit placing multiple nuclear warheads on a single missile, through MIRV technology (for "multiple independently targeted re-entry vehicles"). Without MIRVs, there would not have been even the hypothetical danger of a disabling "first strike" which has proven so vexatious for the past five years.

It could happen again, the arms-controllers say: with weapons in outer space, opening a new frontier to the arms race; with cruise missiles, which are so hard for the other side to count, and therefore to regulate in arms agreements; with other, now-unknown genies. That is why they place such emphasis on keeping "the process" going, and why they are so cautious about doing or saying things that might lead to rupture.

They find it dangerous to assume that the U.S. is the only occupant of the moral high ground—or, more precisely, that it will automatically look that way to all other coun-

tries. They argue that it is bad for deterrent stability, and therefore for world peace, if either side builds a weapon capable of launching a first strike against the other. And they are concerned that America will prove inept in the "perceptions," or propaganda, battle for European opinion. They say that European cooperation and good will cannot be taken for granted. The greatest long-term threat to Western security would be the crumbling of NATO, and the greatest threat to NATO would be an American administration that sounded hot-tempered, cowboy-like, unawed by the threat of nuclear weapons.

The liberal arms-control camp is mainly, but not exclusively, Democratic. One of the Democratic senators running for President, Alan Cranston, of California, has made arms control the central tenet of his campaign, and two others—Gary Hart, of Colorado, and John Glenn, of Ohio—use it as a cudgel against the Reagan Administration. The most prominent Democratic candidate, Walter Mondale, has chosen SALT II as one of the few legacies of the Carter Administration that he can boast about.

But the line-up on arms control is not strictly partisan. The first SALT agreement, after all, was the child of Richard Nixon and Henry Kissinger. Several Republican members of the Senate Foreign Relations Committee, such as Charles Percy, of Illinois, the chairman; Charles Mathias, of Maryland; and Larry Pressler, of South Dakota, are outspokenly "committed to arms control." And few politicians were as fearsome in their opposition to the SALT II treaty as a Democrat, Henry Jackson, of Washington.

If there is a general difference between the arms-controllers and their adversaries, it has more to do with culture than with party politics. In their hearts, most people who believe in arms control trust the foreign-policy establishment of the last generation. They may not agree on every detail of its outlook; many emphatically disagreed about America's involvement in Vietnam. But while Robert McNamara and McGeorge Bundy could never have made common cause in the sixties with Joseph Biden or Paul Tsongas or other young Democrats who have now become senators and leading advocates of arms control, they all stand together in insisting that America's security lies in negotiated limits on nuclear weapons.

To a surprising degree, the distinction is a matter of education and class. Members of the liberal arms-control camp pride themselves on the sophistication, the long study and the international contacts, the appreciation of diplomatic complexities, that underlie their policies. What they most fear from, say, a Jesse Helms of the other side is his ability to inflame less sophisticated popular passion. When they watch President Reagan's speeches about the big Soviet lead in land-based missiles, the liberals instantly think of the offsetting American advantages in submarine-based missiles, and bombers, and total warheads. They are not sure the people in Midland and Asheville do.

ACDA is singularly important to this camp. The liberals think of it as, by rights, their agency. Claiborne Pell, the

patrician Democratic senator from Rhode Island, reminded his colleagues during the Adelman debate that he had participated in the creation of ACDA, in 1961. "What we intended twenty-two years ago was for ACDA to play the role of an advocate for arms control . . . as a way to enhance our national security," he said. "We wanted, in other words, an agency that would more often than not counter-balance what was coming out of the Pentagon. The last thing that we wanted was for ACDA to be an echo chamber for policies developed in the Pentagon."

The liberals' proprietary attitude toward ACDA constricts a President's range of choices when he nominates a director. Certain agencies in Washington are ceded to certain interest groups. In filling major positions at the Defense Department or the Central Intelligence Agency, for example, a wise President will avoid nominees who symbolically irritate "strong-defense" groups. The same thing holds with ACDA, the arms-controllers feel. This is one of those jobs for which a President should come up with someone who shares the faith on which the agency was founded. To do otherwise would be to appoint an atheist chaplain.

ARRAYED FOR RIGHTEOUS COMBAT AGAINST THE liberals are the forces of the other main arms-control camp. It is a coalition whose members feel that unless "the process" is challenged, America will eventually succumb to its more resolute adversary. To the liberals, the members of this second camp are "right-wingers," or, in extreme cases, "warmongers." To themselves, they are "realists" or "conservative skeptics."

The conservatives hold that if the world has a hope for true arms control, it rests with them. For they, unlike the arms-controllers, have purged the opiate of "the process" from their systems.

The conservatives challenge "the process" on practical grounds: all that the SALT treaties have done, they say, is ratify an appalling one-sided buildup in nuclear force. They say that the arms-control establishment is obsessed with reaching agreements, any agreements, whether or not they truly bolster American security. They also mount a challenge on moral grounds. They say that something in the liberal soul is satisfied by the "inevitability" of nuclear deterrence, the impossibility of ever regaining the upper hand. The conservatives claim, as William Safire put it in *The New York Times*, "that the time is ripe for a breakthrough that will reduce the nuclear arsenals; they are willing to risk the delays of a Soviet propaganda offensive to accomplish genuine arms reduction."

The "genuine arms reduction" would come through the Strategic Arms Reduction Talks, or START, President Reagan's alternative to the pussyfooting of SALT. "You and others who are very favorable on arms control are saying, take tiny steps," Kenneth Adelman told Senator Joseph Biden, of Delaware, at his hearing. "The President is saying, take

big steps, let us have real reductions. . . . if you ask for baby steps, then you are going to get baby steps."

To this the liberals reply, If you insist on too much, you will end up with nothing. They suspect that the conservatives are ultimately more determined to win the arms race than to curtail it, and that to the conservatives, "nothing" in arms control would not be so bad. Watching the months pass with no apparent progress in START, the arms-controllers see their fears borne out.

Behind these differences of policy, the fundamental intellectual difference between the sides is the historical prism through which their perceptions are bent. When the liberals look at the 1980s, some of them see 1914. When the conservatives look at the 1980s, nearly all of them see 1938.

Most arms-control discussions with an anti-SALT conservative lead quickly to reminders of Munich, of the cost of appeasement, of Europe's willful refusal to face the truth about Hitler until it was nearly too late. "I guess Ronald Reagan is a warmonger just like Winston Churchill," Senator Jake Garn, of Utah, said during the Adelman debate. "And we can find lots of other examples of . . . the Neville Chamberlains, the appeasers of this world who never . . . seem to learn the lessons of history no matter how many decades or centuries pass by." Also during the Adelman debate, Senator John Tower, of Texas, nattily tailored and bristling with indignation, reminded his colleagues that within six years of Chamberlain's declaration, in 1938, of "peace in our time," millions of people had died on the battlefields and in the extermination camps. Having made his point, Tower slammed his papers down on his desk and said with passionate contempt, "*Do not tell me there is no lesson to be learned there.*"

"We are not the village idiots," an assistant to a Republican senator remarked in an interview during the Adelman controversy. "We recognize that Andropov is not Hitler. But *if he were*, we don't trust that the Establishment, with a capital E, would tell us in time."

The abstract concern about appeasement comes to a focus on the question of "verification"—determining whether the Soviet Union has honored the treaties it has signed. To the conservatives, this is a natural corollary of the Munich analogy, since it concerns the willingness of a free society to face uncomfortable truths.

Although it has received less attention than abortion or school prayer, verification is Issue Number One to some of President Reagan's original supporters, especially those who fear that the President is going soft on his campaign promises. The 1980 Republican platform contained a promise to end the Democrats' "cover-up" of Soviet treaty violations. Four months after Reagan took office, he received a letter signed by twenty-one conservative senators, asking whether new radar projects under way in the Soviet Union constituted blatant violations of SALT I. A tug-of-war has been going on ever since between Reagan and the Republican New Right, over the President's refusal to declare officially that the Soviets have violated the treaties.

For those who feel that Ronald Reagan has been too lenient about Soviet violations, David Sullivan is a pivotal figure. Sullivan is a stocky, short-haired man in his late thirties who works jointly for Senator James McClure and Senator Steven Symms, both of Idaho. He volunteered for the Marines after graduating from Harvard, in 1965; got his master's at Columbia; and joined the CIA after combat in Vietnam.

Sullivan says that he began his intelligence career as a supporter of détente and SALT I, but what he learned about Soviet plans made him a skeptic. He resigned from the CIA in 1978, in the middle of a controversy over allegations that he had leaked documents to Richard Perle, then an assistant to Senator Jackson. Many conservatives considered him a martyr, their equivalent of Daniel Ellsberg. He was rescued and employed by conservative senators. In 1982, he published a book, *The Bitter Fruit of SALT: A Record of Soviet Duplicity*. It was the unclassified version of his dossier on Soviet misbehavior. Its case is this:

By using Cuba as a base for the controversial "combat brigade" discovered in 1979 and for planes capable of carrying nuclear weapons, the Soviets violated the agreement between John Kennedy and Nikita Khrushchev that ended the Cuban missile crisis in 1962.

By venting radioactive material to the atmosphere some thirty times, and by testing weapons larger than the 150-kiloton limit, they violated the Limited Test-Ban Treaty of 1963 and the Threshold Test-Ban Treaty of 1974, respectively.

By dragging their feet and cutting corners in a number of areas, such as dismantling old missiles, they circumvented or violated the SALT I agreement.

By developing several new models of intercontinental ballistic missiles—not just the one new type permitted by SALT II—and by encoding the test data their missiles send back from test flights, thereby thwarting American attempts to monitor the tests, they violated SALT II.

The SALT II agreement, of course, was never ratified by the United States, largely because Sullivan's allies in the conservative camp succeeded in stalling it until the invasion of Afghanistan made its ratification impractical. It may therefore seem graceless of them to complain that the Soviet Union is not living by a treaty that the conservatives helped torpedo. They see no inconsistency in their stance, for they say they are really discussing a pattern of behavior, not the specifics of any one treaty. From the long, sorry record of Soviet duplicity, we can learn how to reach a new agreement, a realistic and enforceable one.

"We have got to show the Soviet Union just how serious we are," David Sullivan says. "We must convince them that they have to change their behavior. If they are confronted with resolute American interest in arms control, accompanied by a strict insistence on verification, we may get agreements worth having. But we are no longer going to accept unequal agreements, unequally applied and unequally enforced."

Even within the Reagan Administration, there is resistance to this view. Nearly all of the evidence about treaty compliance lies beneath shrouds of classifications. The results usually point toward a range of probabilities, a 60 percent likelihood that the new missile has certain characteristics, 40 percent that it has others.

In general, conservatives pay more attention to alleged treaty violations than liberals do, because of their different conception of the nuclear balance. To them, nuclear deterrence is not an all-or-nothing question. Weapon must be matched against weapon; there must be a balance of forces in every strategic theater, at every level of potential conflict. Many arms-controllers are less upset by the prospect of a new kind of Soviet missile. Yes, the Russians may well be cheating; and yes, they should be called on it if they are. But what does this new missile really matter, when both sides already have enough to do the job? Why should we panic about Soviet air-defense systems and "battle-management radars" if we have concluded that anti-ballistic-missile systems simply cannot work?

To the conservatives, America's response to verification and to the larger failure of "the process" will reveal nothing less than whether we have the mental and moral will to survive. To the liberals, secrecy, defensiveness, and sharp practice are all part of the Soviet Union's standard operating procedure, which we should recognize but not be panicked by when we negotiate with the Russians. A public hullabaloo cannot possibly improve things; the very reason the U.S. and Russia established the Standing Consultative Commission, in the first SALT agreement, was to resolve these complaints.

THIS, THEN, WAS THE LINEUP AS OF EARLY 1983: arms-controllers, who felt that the Administration was on the verge of irreversible error—indeed, was courting a breakdown of "the process" in order to justify its military budget; and anti-SALT conservatives, who despaired that even Ronald Reagan would speak the truth about Soviet behavior. Each group came to the Adelman nomination bearing the marks of its recent experience.

To the liberals, the significant development of 1982 was the anti-nuclear movement, and in particular the resistance in Europe to the Pershing II nuclear missiles America planned to deploy there. When NATO decided, in December of 1979, to go ahead with the Pershings, it also decided to negotiate with the Soviet Union about reductions in these "intermediate-range nuclear forces," or INFs. This was called the "two-track" decision, but one of the tracks—the INF negotiations in Geneva—seemed by 1983 to be going nowhere.

Many in the arms-control movement saw Ronald Reagan as the culprit. In 1981, he proposed his "zero option" for INF negotiations: the United States would not go ahead with the Pershings if the Soviet Union would dismantle its

counterpart missiles, the SS-20s. He stuck with the zero option, despite flat Soviet rejection, throughout 1982. To the left, this seemed unrealistic: more important, *it would look that way in Europe*.

This fear reached panic level on the day Eugene Rostow was dismissed. As time went on, the private word inside the Administration was that Rostow's problems were mainly personal: his prickliness in team play, his eagerness to volunteer advice on subjects where his views were not solicited, such as the Middle East. But for several weeks after his departure, the public story was different. Rostow was portrayed in the newspapers as a victim of the right. He had approved a compromise deviation from the zero option; he was too soft-line.

Here was a man who many of the arms-controllers thought was fairly intransigent; yet even he seemed not to be hard-line enough for the Administration. What could be meant by the selection of Adelman, whom most of the liberals had never heard of? The only rationale they could see was a desire to place a nullity at the head of the agency that rightly should be advocating arms control. As Paul Tsongas, of Massachusetts, put it to Adelman during his confirmation hearings: "Dr. Rostow had credibility, he had a constituency. . . and when he either jumps or is pushed off the ship, it makes international headlines. You are not well known, you are not perceived as an expert in these affairs, you don't have your constituency. And if I were the President and wanted to have someone who I could control . . . why is it not logical that you are the kind of person I would go to?"

The conservatives came to the Adelman hearings at a high point in their power. Over the past two decades, Congress has been transformed by the decline of party discipline and of the seniority system, and by the rise of the staff establishment. Initially, the increase in staff members seemed to help the left. During the Vietnam War, the Senate Foreign Relations Committee hired a number of investigators who had worked in the executive branch, who had an insider's sense of where to find facts and how to exert influence.

For the past five years, the action has been on the right. Staunchly conservative senators came to dominate the delegations from the South and West. They collaborated more closely than their liberal counterparts. For example, more than a dozen senators coordinated their efforts through the Senate Steering Committee, an unofficial but highly important caucus that holds weekly meetings and deploys its own staff.

A perhaps more important network developed among the members of the senators' staff. Staff assistants to such conservative Republican senators as Jesse Helms, Jake Garn, John Tower, James McClure, and (on military matters) the Democrat Henry Jackson knew each other, met regularly, and combined their efforts far more successfully than any counterparts on the left. They stepped into the limelight in 1980, when newspapers in Washington were

full of articles about the "Madison Group," a collection of staff members with a shared commitment to a conservative foreign policy.

With Reagan's election, many alumni of the group went into the executive branch. The best known is Richard Perle, for ten years an assistant to Henry Jackson, who became an assistant secretary of defense. In his years in the Senate, Perle was legendary for managing the flow of information in from the bureaucracy and out to sympathetic journalists, especially the columnists Rowland Evans and Robert Novak. Now, in his deceptively modest position in the Pentagon, he is credited by conservatives, and blamed by liberals, as the main intellectual force behind the Administration's arms-control policy.

Despite the crossovers to the Administration, the congressional staff network was still in place, and in the years before the Adelman showdown it had helped conservative senators execute a new tactic. Obstructive techniques, of which filibusters are the most dramatic, had traditionally been employed on large legislative issues. Southern conservatives protested civil-rights bills in the sixties, northern liberals opposed the decontrol of gas prices in the seventies. Led by Jesse Helms, the conservatives began obstructing people rather than bills.

Through much of 1982, the Republican right stood square in the road against Richard R. Burt, a former reporter for *The New York Times*, whom Reagan had nominated assistant secretary of state for European affairs. By the time they finally relented, the conservatives claimed to have been given "reassurances" from George Shultz about arms-control policy. And, indeed, a hardliner on Soviet SALT violations, Manfred Eimer, was at the same time placed in charge of verification activities at ACDA.

The conservatives scored again last January, when President Reagan withdrew Robert Grey's nomination as deputy director of ACDA. Grey was Eugene Rostow's choice for the job (after his early entreaties to Kenneth Adelman), and he had been acting deputy for many months. But to the right, he was the Antichrist, especially on the all-important question of verification. The conservatives claimed that he did not cooperate with some of their favorite verification experts, and that he did not answer their letters about Soviet SALT violations. Incredibly, he had for a brief time been an assistant to Alan Cranston. When Congress reconvened this year, President Reagan withdrew the nomination. With that, the right had a big win and Rostow's departure became a matter of time.

Some conservatives saw these victories as just the beginning of tomorrow's politics. They felt that the professional officer corps and the Foreign Service had been "politicized," by which they meant they had been pressed into service to advocate SALT II. If a senator could reach down to block a potential assistant secretary of state, why could he not do the same within the military? This spring, a conservative staff assistant mentioned one military officer

who had been particularly vigorous in advocating SALT. "When his next promotion comes up, are we supposed to just let him by?"

At the same time, the conservatives sensed that they might be due for a fall. "All this time, the arms-controllers had been watching and taking their licks," one of them said. "They'd seen us reach down into the bureaucracy. Now it was their turn."

ADELMAN WAS BORN IN CHICAGO IN JUNE OF 1946. He grew up there, in a Jewish household, number four in a family of six children. His father is an attorney. His early passion was swimming, and it was for its swimming coach that he chose Grinnell College, in Iowa. There he set a conference record in the butterfly and became captain of the swim team before graduating, in 1967.

Adelman then moved to Washington, where he began work on a master's degree in foreign service at Georgetown University. He completed the degree in 1968 and then volunteered for the Marine Corps, in hopes of being an underwater-demolition man, but his chronic eczema disqualified him from service. Instead, he began work at the Commerce Department, and in 1970 he switched to the Office of Economic Opportunity, which ran anti-poverty programs.

The OEO was then directed by Donald Rumsfeld, a Republican rising star who had given up his congressional seat from Illinois to take the job. With him were a number of other young Republicans who came to prominence during the Ford and Reagan administrations, including Richard Cheney, who became chief of the White House staff under Ford, and Frank Carlucci, who has been Caspar Weinberger's deputy director at several government agencies, most recently at the Department of Defense. In his spell at OEO, Adelman met this future Republican cadre, and also Carol Craigle, then an assistant to Carlucci, whom he married in 1971.

In the fall of 1972, Adelman began research for a doctorate in international affairs and moved with his wife to Zaire, where she was on assignment for the Agency for International Development. There they lived for two and a half years. Adelman studied French, collected African art, and served as a translator for Muhammad Ali during his fight there. He also wrote a series of articles on Zaire for *The Washington Post* and traveled to Angola to report for *Foreign Affairs*.

In the spring of 1975, the Adelmans returned to America for the birth of their first child, a daughter named Jessica. Their intended next stop was Bangkok, where Adelman planned to teach philosophy and religion at a university and his wife would continue her AID work. But the spring of 1975 was when Saigon fell; it did not seem the time to take a family to Southeast Asia. Adelman worked briefly in the Congressional Liaison Office of AID and then

went to the Defense Department, where his friend Donald Rumsfeld had become secretary. He served as Rumsfeld's special assistant until the end of the Ford Administration, when he joined the Washington office of the think tank known as SRI International.

Writing became Adelman's new passion. While in Africa, he had turned out more than a dozen articles for newspapers and foreign-policy journals. In the late seventies, as he passed his thirtieth birthday, he began writing even more prolifically, and with a more distinctly conservative bent. He widened his range to include general discussions of weapons policy, dealing with the Soviet Union, keeping the Western alliance intact. He wrote for journals such as *Foreign Affairs*, *Foreign Policy*, and *Harper's*, and for a variety of newspaper op-ed pages. He came to be featured by conservative publications, neo- and otherwise, such as *Policy Review*, *The American Spectator*, and the editorial page of *The Wall Street Journal*.

Adelman's book and articles about Africa, the most interesting of his works, stressed the local realities that the bright, progressive viewpoint toward emerging nations so often overlooks. They also emphasized Soviet influence on the continent.

As Adelman's focus turned to national security, his writings were more squarely in the conservative mainstream. He wrote that American intelligence systems, while good at detecting current Soviet behavior, had been truly inadequate in predicting the Soviet military buildup. He said that America should be more assertive in presenting its case to the world. He said that the U.S. needed an across-the-board defense buildup, and that events of the late seventies had discredited the liberal foreign-policy elite.

On the specific subject of nuclear-arms control, to which he devoted about a dozen newspaper and magazine articles, Adelman made the conservative case against "the SALT process." "It has not saved money for either side," he wrote, "and is unlikely ever to do so; it has not reduced the destructive power of either side, and is unlikely ever to do so; and it has not enhanced strategic stability (quite the contrary), and is unlikely ever to do so." He argued that the arms-controllers' ceaseless search for an agreement with the Russians led to vague, unverifiable treaties—which in turn only deepened suspicions and mutual distrust. He wrote in *The Wall Street Journal* that if there were to be a SALT III, it would have to improve on previous efforts in three ways. It should develop more sophisticated ways of counting weapons; it should encompass the intermediate-range forces, those based in and aimed at Europe; and it should embrace other nations, especially the European allies, along with the two superpowers.

Many of the articles shared a distinctive tone. In his personal bearing, Adelman does not have the hater's edge that so often typifies ideologues of left and right. In his writing, he sometimes does. The mocking, wise-guy tenor of several articles was later to cause him regret.

While establishing his name as a writer, Adelman also

developed wide contacts within the conservative foreign-policy establishment. In 1977, while on a trip to Japan, Richard Allen, who later became President Reagan's first national security adviser, read one of Adelman's articles in *Foreign Policy*, called "The Black Man's Burden." When Allen returned, he called Adelman and invited him to lunch; from such contacts grew Adelman's inclusion on the executive board of the Committee on the Present Danger, which propounded the anti-SALT point of view during the Carter years. Adelman came to know the principal figures in the neo-conservative foreign-policy firmament. By the late seventies, he counted as friends Eugene Rostow, Paul Nitze, Jeane Kirkpatrick, Robert Bartley, Irving Kristol, Fred Ikle, Richard Perle, Richard Burt, Robert Tucker, Norman Podhoretz, Midge Decter, and many others. Unlike many of his associates, Adelman was not doing anything so crude as looking for a job in the new Administration. But for a person who aspired to a place at the main table of the intellectuals, this was a remarkably helpful corps of friends and patrons.

In 1978, at Richard Allen's request, Adelman began informally sending position papers and memos to the Reagan campaign. In the summer of 1980, he agreed to have his name published as part of a list of Reagan's foreign-policy advisers. On the night of the 1980 election, Adelman watched the returns come in, pronounced the results good for America, but said he would never take an Administration job.

During the period before Reagan's inauguration, Adelman worked on the transition team. There he launched a battle against Reagan's right flank. His contacts and patrons had been either liberal Republicans, such as Donald Rumsfeld and Frank Carlucci, or neo-conservatives. Neither group was a natural ally of the Jesse Helms-style New Right. The right wing regarded Carlucci's nomination for deputy secretary of defense as the first scrimmage in the battle for the Administration's soul. Adelman did his best to build support for his friend Carlucci; he was fighting not Democrats but Jesse Helms.

At the end of the transition, when Reagan took office and the American hostages were finally freed in Iran, Adelman flew to West Germany with Jimmy Carter, representing the new President. One photo in Hamilton Jordan's book, *Crisis*, shows a weary-looking Jimmy Carter smiling grimly at his lieutenants on the flight back from Wiesbaden. The caption reads, "Jordan, Carter, and staff. . . ." Looming over Jordan's shoulder is Adelman's grinning face.

Most young men so positioned would have moved straight into the Administration. Adelman had his chances, but he was true to his early word. Alexander Haig asked him to become assistant secretary of state for Latin American affairs—that is, to sit on the hot seat when the Administration "went to the source" of subversion in Central America. Adelman said no. Eugene Rostow felt him out about joining ACDA as deputy director until Adelman politely demurred. Frank Carlucci and Richard





Allen extended open invitations. Jeane Kirkpatrick asked him to join her at the UN.

Adelman returned to SRI and to the family life that meant so much to him, until he heard from Jeane Kirkpatrick a second time, in April. In her brief tenure as American ambassador to the United Nations, she had been through an awkward churning of the staff and was now looking for a deputy. She remembered his earlier list of objections: he didn't want to uproot the kids, his wife didn't want to quit her job, he didn't want to re-enter bureaucratic life. She wanted to tell him that life at the UN was even worse than he imagined. But would he and Carol still come up and talk with her?

They would, and shortly afterward they had signed on. Adelman liked and admired Kirkpatrick, his former teacher at Georgetown, beneath whose crusty public demeanor he thought he had discovered a sweet soul. The challenge she had undertaken at the UN—exposing the hypocrisy of Third World diplomacy, telling America's story without embarrassment—was what he had been writing about all along. Apart from the wear and tear on his children, he and his wife were eager to leave Washington, the company town. As when he had moved to Zaire or volunteered for the frogmen, he was in the mood for a shake-up of routines.

At the UN, he was a yeoman in asserting the Administration's case. He made pungent, "undiplomatic" speeches alleging that the Soviets had used poison gas and "yellow rain." When a Swedish representative piously denounced the United States for playing "a crucial role when it comes to keeping tottering dictatorships on their feet," Adelman snapped back that the statement was "obnoxious [and] false." Who were the Swedes to complain, when they had given \$50 million in aid "to none other than Vietnam, a country that so palpably violates its own people's human rights"? Some Third World diplomats predictably thought him monstrous. The very day before his ACDA appointment was announced, *The Wall Street Journal* published, on its op-ed page, Adelman's article "How Much Can One Say in 27,000 Tons of Words?" It lampooned the endless flow of reports and studies that the Lilliputians of the UN disgorged.

He was floor manager for the temporary American delegations that rotated in and out for special sessions. One of the delegates, Gordon Luce, a banker from San Diego, wrote that he found Adelman "smart, scholarly, energetic, reasonable and strong but flexible." In 1982, when the Administration asked Donald Rumsfeld to travel through Western Europe explaining why the U.S. hated the Law of the Sea Treaty, George Shultz asked Adelman to accompany Rumsfeld. "Scuttle Diplomacy," Carol Adelman christened the mission.

In short, by January of 1983, Kenneth Adelman was on top of the world. He and his family loved New York. They loved the regular dinner parties at which diplomats and thinkers gathered to talk policy. He loved his job, as an

able polemicist for the neo-conservative view of American interests. He loved the brave simplicity of Ronald Reagan's mind and character.

Then came the call from William Clark.

WHEN ADELMAN HEARD CLARK PROPOSE THAT he become ACDA director, his initial answer was no. Clark asked him what the problem was. Adelman said he knew the subject of arms control was poisonous, and that Rostow's departure would make it more so. He suspected that his age and his unsuitable personality would get him in trouble.

Later, at the time of the confirmation hearings, Adelman was at pains to make his reluctance clear. He told various senators that Clark had sympathized with his hesitation. When the President had asked Clark, an old and trusted friend, to become deputy secretary of state, he had had absolutely no experience in foreign affairs. He had endured several weeks of international humiliation when he failed basic who-what-where questions at his confirmation hearings. He had persevered because he knew he had the President's trust. Now he had become national security adviser, and he told Adelman that if the President had been looking for the "best-qualified" candidate for that job, it would not have been Clark. But the President wanted him.

To Adelman, then, Clark said the question was not whether he was the ideal man for the ACDA job, and not really whether he wanted it. The President thought he was the right man, and the only question was whether Adelman was willing to serve. When the question was put in those terms, Adelman had little choice but to say yes.

As news of his selection broke in Washington that afternoon, the response was not warm. Many liberal arms-control authorities said their first reaction was "Who is he?" Adelman had never worked within the ACDA bureaucracy; he did not have many contacts among congressional staffers or liberal specialists. The congressional leadership, which prizes the appearance of being ahead of the news, had not been forewarned.

Among the conservatives, Adelman was better known, but as a Rumsfeld man, a supporter of Carlucci and Burt, not one of their own. After quick consultation, several conservative staff members and senators decided they should be grateful that it was not anyone worse. Jesse Helms put out a mildly congratulatory statement. Michael Pillsbury, who had served briefly as ACDA's acting director before Rostow was brought in, and had since returned to the Senate staff, telephoned Adelman. As Pillsbury recalls it, he told Adelman the conservatives would be happy to help in whatever way they could—they could do so by being his champions, or by keeping their mouths shut. Both of them laughed, thinking it was a joke. The next day, Dan Rather reported on CBS News that Adelman's nomination was sure to prove controversial because opposition was likely to come from the right.

The staff members of the Foreign Relations Committee, scholars and specialists mainly in their thirties, most of them liberals "committed to arms control," began looking into Adelman's record. They did not like what they found.

The problem was the tone. When he was outside the government, Adelman thought of himself as a writer, not as a potential appointee. He chose his words for their effect at the moment, not for the way they might look to congressional investigators several years hence. He thought that the SALT II treaty was, on balance, a bad idea. Its provisions were so vague that they would only encourage further friction between the U.S. and Russia. He did not wage a holy war against it, as Richard Perle did in the Senate, but he did feel free to ridicule it. When the Senate staffers saw the articles in which he did so, they thought that his attitude reeked of contempt for the whole arms-control process.

One article in particular did Adelman in. Its title was "Rafshooning the Armageddon: The Selling of SALT." Adelman had originally prepared it for Lewis Lapham, then the editor of *Harper's*. Lapham turned it down, writing that "the difficulty had to do with a matter of tone." It was eventually published in the Summer, 1979, issue of *Policy Review*, an organ of the Heritage Foundation.

If pressed, most of the arms-controllers would concede the article's basic argument: that the Carter Administration, in its attempts to sell the SALT II treaty, exaggerated how much difference the treaty would make. But what they found wildly inappropriate was the sarcastic, sophomoric tone. For example, there was Adelman's treatment of John Culver, a Democratic senator from Iowa, who was one of the genuine heroes of the arms-control movement, a former fullback and Marine who said that the only route to strength was arms control. Culver had been knocked out of the Senate in 1981, in part because of his defense of SALT—and how did Adelman portray him? He described Culver reading a letter from a girl whose family had been in Hiroshima when the bomb fell:

"Speaking with a Janis Joplin-like whooping sound, the Senator pinpointed the main problem of the SALT debate: 'We have [lost] . . . the elementary sense of horror and anguish that is needed to make us see the truth.' As indefatigable truth-seeker, the Senator furnishes a major dollop of the needed 'horror and anguish'—details of pain akin to burns from boiling oil, of children screaming for their mothers, of scalded babies, and so on, in what has to be the most sickening description this side of Guyana."

Adelman later conceded to his friends that the article sounded too smart-alecky. For him, that closed the question, as it would for any other writer remembering an old essay that had not been as good as it should.

But his opponents were seeing him as a public servant, not as a writer. If he still believed the things he had written, then he was clearly the wrong man to carry ACDA's unique burdens. And if he said he no longer believed them,

was he anything more than a political chameleon, willing to express whatever view proved convenient at the moment?

"The bottom line of his criticism may have been well taken," one of the committee's staff members said after reading the articles. "SALT II was not going to save the world. But you just didn't get the gut feeling that he believes our security rests on lower levels of arms. A lot of it comes down to gut feelings."

Without knowing Adelman personally, but seeing his views unfold on the printed page, several members of the congressional staff were developing a distinct gut feeling about him. They could not stand him. It did not help that he was the same age as many of the staff members and—as they saw it—had so much less professional experience in arms control. "The fact that he was a smartass rubbed a lot of us the wrong way," one staff assistant said after the hearings. "That he was coming as a poseur into an area where many people had spent so much more time than he had. That added a little pinch of emotion to it."

These feelings mattered, because there are so many choices a senator must make, and so few about which he or his assistants have intense feelings. The influence of staff assistants naturally increases when their passions run high. Several staff members would willingly work late, if that is what it took to preserve "the process," save Ronald Reagan from himself—and beat Kenneth Adelman.

Even from Republicans in the Senate, the initial reaction was cool. The only words of support to be heard had come from Jesse Helms. In response to this sullen reception, the Administration began a whispering campaign. Its message was that no one should get too upset about Kenneth Adelman, because George Shultz would really be in charge. This won few converts. Shultz was already overtaxed as the Administration's Mr. Fixit for every new problem that arose, and he was as inexperienced in arms control as the other main figures—Weinberger, Clark, Reagan himself.

At the same time, the Administration was attempting to explain why Kenneth Adelman, of all the possible candidates, had been chosen for ACDA. The Administration's allies were told that Adelman was a logical, even an outstanding, choice. He had written widely about the subject, had won Jeane Kirkpatrick's admiration at the United Nations, was a fine specimen of the assertive young leaders on whom the future of conservatism would be built.

It was also said, more quietly, that he would fix the things that Rostow broke. "I think they were looking for someone who wouldn't commit Rostow's sins," Michael Pillsbury said later. "Who would not lack modesty. He was young, not old. He was not a know-it-all, not about to move onto everybody else's turf." He was a team player. He could get along with the three negotiators whose efforts he would coordinate: the venerable Paul Nitze, in charge of the INF negotiations; retired general Edward Rowny, the START negotiator; and Morton Abramowitz, a

newly appointed negotiator for the long-running, slow-moving Mutual and Balanced Force Reduction talks in Vienna.

It looked different to the Administration's critics. By their lights, there could hardly have been a more provocative selection. At a moment of utmost delicacy in international relations, with the arms-control bureaucracy already disrupted by the Rostow firing, the Administration was putting forward, for this extraordinary position, an underaged wise guy.

Always in their minds was the thought of "purge." As ACDA had grown more and more politicized since the mid-seventies, each sect of the arms-control faith suspected that the other would stamp out disbelievers if given half a chance. Conservatives had their grievance list of allies slighted in the past. Liberals now saw a counterpurge under way. Its ultimate effect, they feared, would be the bureaucratic subordination of ACDA to the Pentagon, specifically to Richard Perle.

Those who had battled against Perle for ten years in the Senate, who saw him as the most tenacious and unsparing enemy of SALT, were filled with dread by the thought of Perle unimpeded. They looked to ACDA as the internal counterweight, and when they considered Kenneth Adelman, he did not fill the bill. "In the most ambitious construction of his talents, you could not possibly see him as a senior player in the formulation of policy," one of Adelman's opponents said after his nomination. "Even if you're his mother, you can't expect him to have blossomed that quickly. The politics of it meant that it was a consolidation of [Perle's] ability to control the subcabinet game."

ADELMAN KNEW HE MIGHT HAVE TROUBLES, BUT IN the first few days he had no sense of how deep they could become. At that stage, he still had his jaunty, buoyant air. He still said hello with a swooping glissando from high to low, in the style of the fifties singer the Big Bopper. Life's experiences had taught him that most people, once they met him, liked him. So he prepared carefully but without anxiety for his appearance before the Foreign Relations Committee.

According to conventional wisdom, the only way to get in trouble at a confirmation hearing is to say too much. After all, George Shultz had been overwhelmingly confirmed as secretary of state after testimony that amounted to "I'll look into that" and "An interesting idea!" For the previous several months, the Administration had been bedeviled by loose remarks about "prevailing" in nuclear war, and Adelman knew that here was a minefield to be crossed with care.

Meanwhile, the committee staffers were preparing for his arrival. They circulated excerpts from his most flamboyant writings to senators on the committee; they prepared sample questions designed to unveil his sardonic view of SALT. ("How would you reconcile [your] negative

evaluation of the strategic-arms-control process with your desire to be ACDA director?")

Then, on the very day before the hearings, something far more promising fell into the hands of Senator Alan Cranston.

When he heard that Eugene Rostow had been fired, Cranston said that he would make the confirmation hearings on Rostow's successor into a general debate on arms-control policy. When he read samples from "Rafshooning" and other works, Cranston concluded that Adelman represented everything he didn't like about the Administration's policy. Cranston had been the only member of the Foreign Relations Committee to vote against Rostow's confirmation two years earlier. Now he reasoned that no matter how well Adelman might perform in the hearings, he could not redeem the attitude his writings revealed.

As Cranston prepared his questions about SALT and limited wars, Gerald Warburg struck gold. Warburg, twenty-eight, was Cranston's assistant for foreign policy and defense, a tall, thin man with wavy black hair. The day before Adelman's hearing, the Foreign Relations Committee received an unexpected piece of evidence. It was the "executive summary" of a study Adelman had prepared while working at SRI. Since Cranston had been in the news for his criticisms of Adelman, the committee staff passed the study to Cranston's office, where it wound up in Warburg's hands.

It was not the whole document, only a summary, but its few paragraphs stunned Warburg. They discussed what would happen if South Africa got the nuclear bomb.

"It was clear to me that it was an options paper," Warburg said later. "But it was also clear that it contained no conclusive statement that nuclear weapons there would be bad. The last two paragraphs suggested that if South Africa had the bomb, it would be of use to the West.

"I got literal about it. From the context of the study, it was clear that he did not have any view of the importance of non-proliferation at all. It was another example of Adelman saying one thing—that he opposed proliferation—and having written something else."

Armed with this evidence, Cranston and his assistants drafted a question to use the next day.

The hearings opened with an air of moderate drama. Network television was there, and eleven of the committee's seventeen senators: better than average, but not a packed house. Before Adelman was even called to the microphone, Cranston announced that he would vote against him, no matter what. A few minutes later, Cranston revealed his South Africa surprise.

The crucial passage in the executive summary had said that a "clear South African nuclear capability might be helpful to Western security interests in one respect," namely, for warfare against the Soviet submarines that might patrol the Cape route. Since an anti-submarine weapon "could easily be converted into a nuclear gravity bomb, South Africa could simultaneously gain a deterrent

capability with respect to threats it perceives looming from ground assaults in the region."

Cranston read this paragraph to Adelman and said he found it "astounding." What could it mean but that Adelman welcomed South Africa's using "nuclear weapons against their own blacks or against neighboring black nations"?

Adelman, taken aback, replied that he had spent enough time in black Africa to find such suggestions "abhorrent." And why had Cranston ignored the rest of the study? Adelman said that he and his co-author had been asked first whether South Africa's possession of the bomb would be helpful or harmful to American security interests. "I spent seven chapters talking about how it would be harmful." Then he was asked, as a separate stage of the study, what would happen if things went wrong and South Africa did build a bomb. Only then did the anti-submarine issue come up.

From Cranston's and Warburg's point of view, the South Africa questions were perfectly fair. If this nomination really affected humanity's ability to control nuclear weapons, then a few impolite questions might be excused. To Adelman, the incident demonstrated only that Alan Cranston was running for President and looking for headlines, and that he was not punctilious about how he got them. Neither he nor anyone else seemed worried (so Adelman thought) about the pain their wild accusations might inflict.

Adelman may have thought that the day could hold no worse than this, but he had much to learn. In the space of two and a half hours, he saw his nomination begin to change from "controversial" to "imperiled." One of the most devastating moments came near the outset, when Claiborne Pell catechized Adelman. If a nuclear war started, could it be contained? To the arms-control camp it is axiomatic that the first nuclear detonation would lead to the second, and the second to the third, and on to catastrophe.

The first ten words of Adelman's answer, beamed across the country that evening on the network news, were:

"Senator Pell, I just have no thoughts in that area. . . ."

The rest of the answer, not carried on TV, was "and I will tell you why. I think it would be such a time of extreme human stress and extreme conditions that I think any predictions on what leaders around the world would do in that kind of situation would just not be accurate or not be based on anything that I know."

If the confirmation hearing had been a philosophy class, Adelman's answer might have been judged adequate, even profound. No one knows for certain what would happen during a nuclear exchange, except that the damage would be vast. The unfathomability of nuclear weapons is in fact the most important point about them; only by ignoring it can strategists concoct cool, confident scenarios for what "would" or "would not" happen.

But this was not a philosophy class, and Adelman's answer was not artfully begun. It was the same with several other questions he was asked before the lunch break that

first day—his opponents said the number was sixteen or twenty, but a reading of the transcript shows six. In each case, he was asked one of the "nature of God" questions from the nuclear faith; each time, he made a defensible point in a clumsy way.

When Claiborne Pell pursued his first question, asking where Adelman stood on the theological battles about "prevailing" in nuclear war, Adelman said, "This is not an area that I have ever gone into in any depth, and it is not an area [about which] I have any strong feeling." Pell went on to ask whether a nation could survive in a "governable form" after a nuclear exchange. Adelman concluded his answer, "So, again, I am sorry to tell you, I just have no strong opinion on that."

When Jesse Helms, hardly meaning to embarrass Adelman, asked how he would respond if the Russians suddenly proposed to eliminate all nuclear weapons, Adelman replied, "Senator, I would not be honest if I did not tell you that is a thought that I just have never thought about in my life."

When Alan Cranston invited Adelman into the swamp of verification, asking whether he thought the Soviet Union had violated SALT II, Adelman's answer was "Senator, that is not an area that I have looked into. It is not an area I am knowledgeable about at all."

To himself, Adelman's justification was that the questions couldn't be answered. He knew enough about verification to understand that it turned on minute analysis of ambiguous details, and on ultra-classified information he had not been immersed in while at the UN. He found Jesse Helms's question puzzling, because it ignored one complicating fact: the U.S. and the Soviet Union aren't the only countries with nuclear weapons, and how would their agreement control China or Israel?

He also knew that what the senators wanted was answers from the catechism: limited wars would lead to general wars, total elimination of nuclear weapons is mankind's ultimate goal, Soviet compliance with SALT is a subject of constant attention at meetings of the Standing Consultative Commission, etc. But in his stubbornness, or his nervousness, or his determination not to make waves, he neglected to say those things. The resulting "don't know" answers are a minor refrain when the hearing transcript is read as a whole. But they were to constitute the first grave breach of Adelman's defenses, the first sign that he might be not merely harassable but defeatable.

During the rest of the hearing, there was a divided verdict on how the session had gone. Adelman recalls being told by Ed Sanders, the staff director for the committee, that his only problem was that his answers were too long. At the end of the day, Adelman says, Sanders told him that things had gone fine and he should sail through to confirmation. (Sanders says that his encouragement was meant only to be polite.) An assistant to a Democratic senator who later voted against Adelman said it seemed like any other confirmation hearing. The *New York Times* account

of the hearing, written by Philip Taubman late that afternoon, contained no mention of the "don't know" answers.

On the other hand, Rudy Boschwitz, of Minnesota, a Republican senator whose views accorded with Adelman's writings, repeatedly broke into the questioning to express incredulity at the things Adelman said he didn't know. As soon as the hearings adjourned that afternoon, Claiborne Pell talked with Paul Tsongas, said the nominee was in trouble, and arranged a strategy meeting.

"You know how it is in Washington," an assistant to a Democratic senator said a few days later. "You don't know how you feel till you see it on TV that night. If the TV news had said, 'Kenneth Adelman faced tough questioning from committee members, but Administration officials are still confident he will be confirmed,' the hearing would have been a one-day story."

That is not what the TV news said. Each of the three networks showed the "don't know" parts of Adelman's answers, run back to back, with little other evidence of his qualifications. Inside Washington, it confirmed Adelman as a now-vulnerable figure. Outside Washington, it was the public's introduction to a man most people knew nothing else about.

"The impact of the hearing, confirmed by TV, was significant and negative," said an assistant to a Republican senator several weeks after the first hearing. "It was that you had an Administration that was not interested in arms control, and was making it all the worse by sending up some second-rate fellow who was not briefed and capable in the field."

WHEN KEN AND CAROL ADELMAN SAT ON A BED IN a friend's apartment that evening, eating snacks and watching the network news, they felt as if they were in the middle of a terrible dream. Carol had thought, like her husband, that it had all gone reasonably well. Yet here he was, being presented to countless millions of viewers as the classic know-nothing hack. Like her husband, she is affable and warmhearted; yet, like him, she was aware of the station they had attained in life, and was not going to let it all, the friendships and the reputation, be destroyed without a fight. Three or four days after the hearing, when it was apparent that the nomination was in serious trouble, she grew fiercely combative, sending out truth-squad mailings to friendly columnists, venting her anger at the latest outrage, even though her husband was still relatively optimistic about his prospects.

The second hearing, one week later, hardened the impressions left by the first. This time Adelman was his customary assertive self. He answered crisply and concisely the questions on which he had stumbled the week before. He defended Ronald Reagan's policies without setting off alarm bells about winnable nuclear wars. Had he spoken in this manner at the first hearing, his enemies agreed privately, they could not have hoped to block his way.

But, they wondered, how could a man have gone from "no thoughts" about limited war to elegant, paragraph-long answers in the space of a week? After listening to his newly polished answers, Tsongas asked whether Adelman had received any coaching. Adelman said no ("I cannot think of one briefing that I have had. . ."). Eventually he conceded that in the previous two days he'd been through two "murder boards," two hours long each, in which advisers had peppered him with practice questions. In Adelman's mind, the difference was clear, from his days at the Pentagon. A briefing was when you sat down and listened to someone give you information. A murder board was when you worked on your stage presence, your general quickness on your feet. As so often happened during his congressional ordeal, Adelman failed to explain what he was thinking. To his inquisitors, it looked like simple deceit.

Slowly, through the first and second hearings, the liberal staff members and several of the senators had been modifying their estimate of Adelman. Before they heard him testify, they considered him merely a wise guy. But as they tried to follow the twists of his answers, they concluded that he was deliberately evading them. "It was a slow thing," one of the assistants said. "If he was not actually lying, then he was sliding around so facilely that it gave everyone a start. People started to wonder, What kind of a sleazeball are we dealing with here?"

Tsongas put that question in a form that made the TV news: "Who is the real Ken Adelman—this week or last week?"

After the second hearing, the initiative left Adelman's hands and went to the senators'. The Foreign Relations Committee, with its preponderance of arms-control sentiment among the members and the staff, was naturally hostile territory. The specific personalities on the committee complicated the process further.

One of these was Tsongas, a man with a quick, debater-style mind. Adelman visibly stiffened in his chair when Tsongas began to question him. This senator, unlike some others, would be listening to the answers. Tsongas's questions and comments were usually about tactics. He wanted to know Adelman's "game plan" for the testimony, he asked about "scenarios" in which he'd resign in protest, he said the nomination was not "playing well" in Europe. Tsongas began edging into command of the anti-Adelman effort after the second hearing, because Alan Cranston was always on the road, running for President. After the second hearing, Tsongas was declaring that he would do what he generally deplored: he would stop the Senate's business with a filibuster if that is what it took to beat Kenneth Adelman.

Another crucial figure was Charles Percy, the committee chairman, impeccably groomed, a melodious orator, another of those liberal Republicans who, like Elliot Richardson and George Bush, look as if they are born for the leadership class. Percy is widely regarded as a decent, nice

man; but as a chairman he is, in the words of a staff assistant, "comically weak." Committee chairmen may be de facto monarchs or mere figureheads, depending largely on their personalities. Percy was reluctant to ram his decisions through, to violate the spirit of statesmanlike, bipartisan consensus. After the first Adelman hearing, the Administration did not want a second, and after the second it did not want a third. At every point, it thought that delay was its greatest enemy, but Charles Percy was the wrong kind of chairman to speed things up.

A third player in the drama was Rudy Boschwitz, a refugee from Nazi Germany, a staunch defender of Israel, and a skeptic about Soviet intentions. During the first hearing, he had been more nakedly hostile to Adelman than any other senator. He yielded some of his questioning time to Alan Cranston, his polar opposite in ideology, so that Cranston could twist the knife about South Africa. He had objected to Adelman's professed ignorance, and he had been driven wild by one offhand remark. In response to a question from Cranston, Adelman was looking for something good to say about the United Nations. Why, there was the International Atomic Energy Agency, he said, helpfully adding that among UN agencies it was "one of the best."

Boschwitz nearly burst. Thanks to the inexcusable laxness of the IAEA, Iraq had almost become the next nuclear power. Only a squadron of Israeli bombers had forestalled that catastrophe. Boschwitz was also uncomfortable about Jesse Helms's quick endorsement of Adelman. Boschwitz was up for re-election in 1984, in a state traditionally more liberal than he. On the basis of what he'd heard from Adelman, he had everything to gain from opposing him, including a cheap "peace" vote.

Adelman got word of Boschwitz's concerns and set in motion one of the Administration's rare successful counter-maneuvers. He met with Boschwitz at the Metropolitan Club shortly after the first hearing. There he explained the narrow context within which he meant to praise the IAEA. He had previously given Boschwitz a compilation of his writings, which Boschwitz, remarkably, had sat down and read. He interrogated Adelman about the implications and contradictions of his articles. In the end, Boschwitz was satisfied. By the time of the second hearing, he was the closest thing Adelman would have to a champion in the Senate. He was also the only one who gave signs of having read the full texts of Adelman's articles.

The arithmetic of the committee was nine Republicans, eight Democrats. If the Democrats could hold firm, they would need only one Republican vote to beat Adelman. But they could not hold: Edward Zorinsky, of Nebraska, wasted no time in announcing that he supported Adelman. Two other, more liberal, Democrats, Joseph Biden, and Christopher Dodd, of Connecticut, were regarded as on the fence.

After Boschwitz became an Adelman fan, there was only one obvious Democratic hope on the Republican side—

Larry Pressler. Pressler was chairman of a subcommittee that considered arms control in space. A treaty to limit anti-satellite warfare was his special project, and he had been lambasting the Administration for months because of its apparent lack of interest. Soon after Adelman's nomination, he was making gloomy sounds about Adelman's qualifications, and at the hearings he seemed displeased with Adelman's answers about satellite warfare and his position on two treaties that, though signed in the mid-seventies, had never been ratified: the Threshold Test-Ban Treaty and the Peaceful Nuclear Explosions Treaty.

But as Pressler came closer to declaring outright opposition, a bizarre story began to spread. It said that the real reason Pressler was opposing Adelman was that Ronald Reagan had refused to come to Larry Pressler's birthday party. According to several of Adelman's supporters, who would not then and will not now let their names be used, Pressler was pouting about the party and saw Adelman's nomination as an opportunity for revenge.

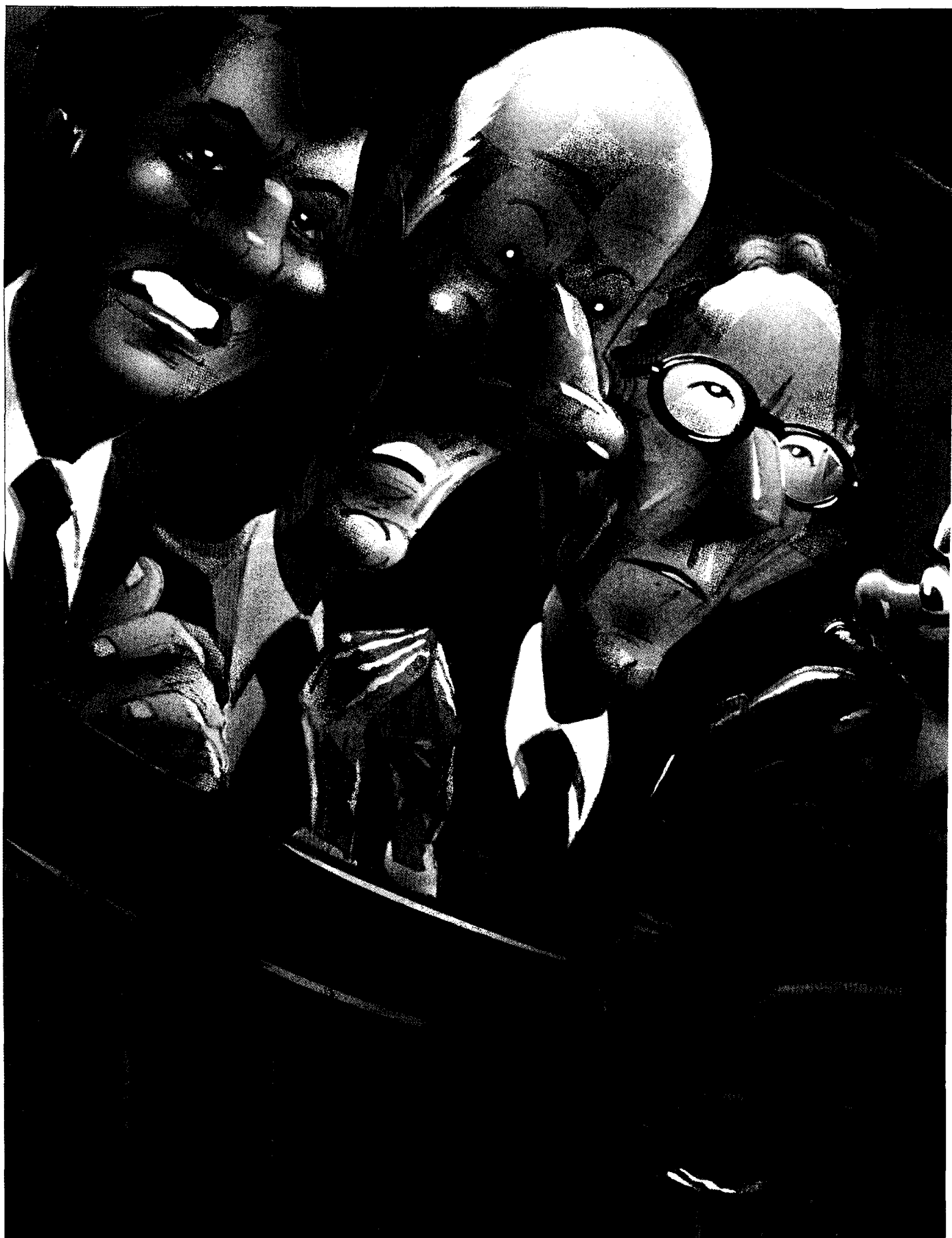
Pressler himself called the story a flat lie—well, almost flat. He later said there might be a "grain of truth" to "a small part" of the story. He recalled having told his fellow legislators, the previous fall, that *if* the President were to come to South Dakota, a birthday party/fund-raiser might be the right occasion. But he claimed that the party had nothing to do with Kenneth Adelman.

The truth about Larry Pressler's birthday party was never conclusively determined, but the story kept bubbling up. Each side thought it epitomized a central truth about this nomination fight. To Adelman, the story summed up what was wrong with the U.S. Senate, where questions of war and peace were resolved on the basis of childish spats. To his opponents, it confirmed their suspicions of how quickly the Administration would resort to a smear campaign.

These same opponents, of course, were undertaking a smear campaign of their own, but they felt there was an important difference in their standards. "We pursued every scum angle we could think of," one staff assistant said when the fight was over. "But we have certain principles. We looked into the rumors and found they wouldn't pan out." That is how the very search for scandal that nauseated Adelman became, to his opponents, a source of pride.

For example: Zaire had a law prohibiting export of native art, and Adelman's house was full of masks and artifacts from the Congo basin. Could he be discredited as an art plunderer, with the suggestion of insensitivity to the Third World?

Answer: No, because the law did not apply when Adelman was in Zaire. The man officially responsible for enforcing the law was the director of the museum in Kinshasa. He had admired Adelman's collection in Zaire, and again when he visited the Adelmans' home in Arlington, Virginia. But Adelman and his attorneys had to spend most of a week cajoling the exculpatory statement out of Zaire's ambassador to the U.S. The ambassador had





not heard of the law, and no one back in Zaire seemed to be able to locate a copy. The task of looking it up and explaining its provisions fell to the U.S. Department of State.

There was another possible smoking gun, this one from Adelman's tenure at the UN. In 1981, during the campaign to replace Kurt Waldheim as the UN's secretary general, one of the candidates was Salim Salim, foreign minister of Tanzania, whom the U.S. delegation opposed. An urgent cable reached the State Department from the American Embassy in Dar es Salaam, Tanzania. It claimed that Adelman was being quoted in local radio reports as saying that Salim Salim was the kind of man "who swings from trees."

Minutes after the original cable, a second arrived. It said that the first cable was a hoax, the work of a junior press officer. He meant to rib the chief of mission, who was preparing for a meeting with Tanzania's president, Julius Nyerere, and was already uneasy about an unflattering profile of Nyerere that Adelman had published in *Harper's*. All meant in fun, the message implied; appropriate steps will be taken.

Adelman passed through the confirmation dreading the appearance of the first telegram. In fact, it had already fallen into the Democrats' hands from a source at the United Nations. The staff had even looked into it eagerly. Paul Tsongas had called the ambassador from Tanzania to ask if it was true. But it didn't pan out.

ON WEDNESDAY, FEBRUARY 16, FIVE WEEKS AFTER Adelman's nomination, the first clear test of strength was at hand. Going into the Foreign Relations Committee's business meeting, Tsongas and Cranston thought they lacked the votes. Their strategy was to look for a further delay, to keep Adelman in the spotlight a little longer. Cranston had material to introduce into the record which would almost guarantee delay, and he began the meeting by explaining his plan.

Before its impact could be measured, the committee's political landscape was drastically changed. Charles Mathias, the veteran Republican from Maryland, gave a set-piece oration in the committee room. He said that Adelman must be turned down.

"It is an unhappy coincidence that . . . we should have a President, a secretary of state, a secretary of defense, and a national security adviser who are all innocent of experience in the complex and bewildering world of arms control. . . . It would be neither coincidence nor chance if a fifth man, the director of the Arms Control and Disarmament Agency, should also be without experience, knowledge, or competence in the field. . . . So I would hope that Mr. Adelman could be excused from taking a crash course in a subject upon which, until now, he has not concentrated. The President can then enjoy that privilege which is so rare in human experience—a second choice."

As soon as Mathias was through, Percy looked at Alan Cranston and asked if he'd like to renew his motion that the vote be postponed. Laughter broke out around the room. With his dramatic switch of sides, Mathias had changed not only the emotion in the committee but also its basic arithmetic. Now the vote would be 9 to 8 against Adelman, if Biden and Dodd stuck with their party. Tsongas determined that they would, and he sent a note to Cranston. It said, "We have the votes. Let's go."

For all of the casual histrionics in which they had so far indulged, the senators, as they reached the point of decision, considered it no light thing to reject a nominee. They seemed, at least for the moment, sobered by the appearance this would give. Part of their argument against Adelman was that the nation needed to present a serious, steady face to the world. So the suggestion was heard: let us put it off again and give the President a chance to do the right thing. "If the vote is cast now, Mr. Adelman loses," Joseph Biden said. "I do not think we should put the President in that position."

By 14 to 2, the committee voted to postpone its decision on Adelman for another week. Its intended message to President Reagan, Paul Tsongas said in formulating the resolution, was that "this is not working and it is time to go back and perhaps submit a nominee that we can all enthusiastically endorse. . . ."

Ronald Reagan was having none of it. He said publicly to reporters, and privately, through intermediaries, to Adelman, that he stood behind his man. The private message included the thought that if Reagan could not stand up to Alan Cranston and Claiborne Pell, how could he stand up to the Russians?

Kenneth Adelman, hearing of the President's steadfastness, felt a new wave of dedication to Ronald Reagan. If someone had to suffer publicly so that the President's visions might be realized, Adelman was proud to have been chosen to make the sacrifice.

The Senate committee, learning of the President's response, looked more carefully at the evidence Alan Cranston had introduced.

ABOUT THE TIME OF THE SECOND HEARING, CRANSTON'S press secretary, Murray Flander, had received a telephone call from the columnist Richard Reeves. Reeves told him that he had written a column Cranston would want to see. Since Reeves had no outlet in Washington, he arranged for his syndicate, in Kansas City, to send it to Cranston.

Reeves's column concerned another column, written by Ken Auletta in the New York *Daily News* two years earlier. Auletta had met Adelman at seminars at the Lehrman Institute and had heard him espouse his foreign-policy views.

In May of 1981, before Adelman joined the Reagan Administration, Auletta wrote a piece on the "radical"

changes the President was making in U.S. foreign policy. About a quarter of the column was devoted to Adelman, including the following passages:

"I can't think of any negotiations on security or weaponry that have done any good," says Kenneth L. Adelman. . . .

"One reason not to rush into negotiations," Adelman continues, "is that in a democracy these negotiations tend to discourage money for defense programs. The public says, 'Why increase the military when we're negotiating with the Russians?'. . . ."

"Representing a common feeling within the Reagan administration, Adelman says the major reason to enter into arms negotiations is to placate our allies and American public opinion. 'My policy would be to do it for political reasons,' he says. But: 'I think it's a sham.'"

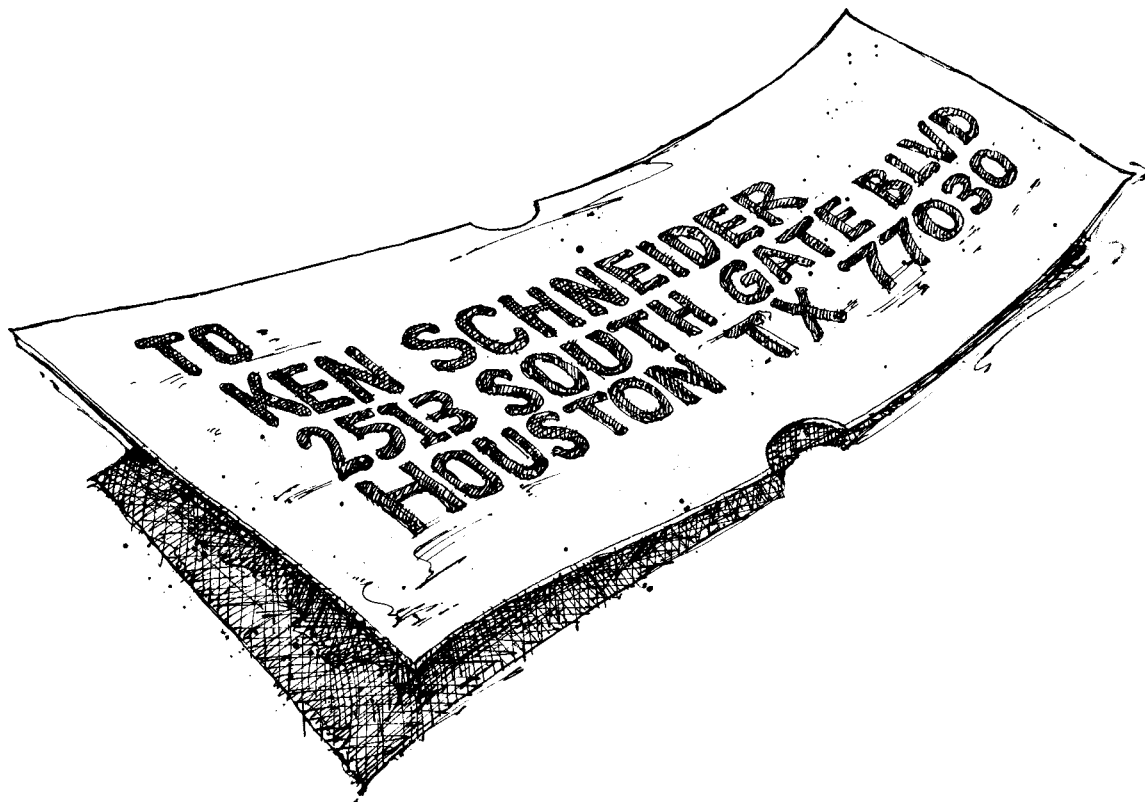
Auletta heard no reaction from Adelman. Twenty months passed. Then, shortly after Adelman's appointment was announced, Auletta was dining with Reeves. Auletta mentioned that he had done a column in which Adelman had said things hostile to the traditional conception of arms control. Auletta showed Reeves the column and the six pages of notes he had taken during a telephone interview. Reeves got Adelman's home telephone number from Auletta and called for his comments.

Adelman did not talk to Reeves directly—he was keeping away from the press—but he was perplexed when his wife relayed Reeves's questions to him. He knew Auletta, but he did not know that Auletta had ever written a column about him. He had not seen it when it was published and could not remember Auletta's mentioning it to him. In fact, he could not remember Auletta's ever interviewing him; and that was the message passed through his spokesman back to Reeves.

The "sham" quote next turned up on February 3, the day of Adelman's second hearing. In his commentary on the NBC nightly news, John Chancellor said that the man now proclaiming his fidelity to arms control was "on the record as having said arms talks are only a sham to placate the European allies." In replacing Rostow with Adelman, Chancellor concluded, "the President fired the man with credibility and hired a man with no credibility. Some days we just hand it to the Russians."

The dispute soon became a showdown between two men who felt that their reputations for honesty were on the line. On February 17, two weeks after the Chancellor broadcast, and one day after Alan Cranston read parts of Auletta's column to the Foreign Relations Committee, Adelman issued a press statement. It began by praising Auletta as "a fine journalist with whom I have a good personal relationship. His integrity and professionalism are not under question." It then insisted that Adelman did not remember ever being interviewed by Auletta and that he had never seen the column until Reeves's call. "Had I been shown the article, I would have denied that the alleged quotes reflected my opinions then or reflect my opinions

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now." Of the "sham" quotation, Adelman's statement said, "I do not recall making any such statement *at any time*."

"I was not deceived by the sugar coating," Auletta said of Adelman's statement. "He was trying to have it both ways. Trying to be nice to me and, in effect, calling me a liar. The bottom line of that release was that I am not telling the truth. It seemed to me that I had a credibility problem."

To cope with that problem, Auletta turned over the notes from his interview with Adelman to Marilyn Berger, of AB, who questioned him the night that Adelman's statement was released. On February 18, the next day, Auletta circulated copies of his notes to the many other reporters who were besieging him for information. He also began negotiating an arrangement with the Foreign Relations Committee staff under which he would agree to testify. Auletta said he would come, but only if subpoenaed. The committee's representatives said that they would issue a subpoena, but only if they were sure that Auletta would not fight it and turn it into a freedom-of-the-press confrontation. An agreement on a friendly subpoena was eventually struck.

On February 20, a Sunday, the front page of the *New York Daily News* said, "AULETTA: ADELMAN IS A LIAR." In a column, Auletta said that Adelman's hunger for the appointment was making him slither away from his previous views. If Adelman denied the remarks to a congressional committee, he would be perjuring himself. "I happen to like Adelman, and hope he does not allow ambition, and stubborn vanity, to get him hauled off to jail."

Four days after that column, February 24, Adelman and Auletta were facing each other as sworn witnesses before the Foreign Relations Committee. Adelman had resisted a joint appearance, and especially the idea of oaths, which he thought implied that somebody was lying. His spirits rose the evening before the hearing, when the committee's staff examined copies of Auletta's interview notes. They found that the notes, unlike the column, quoted Adelman as endorsing "real reductions" in nuclear weapons. The offending word "sham" appeared to have been written first as "shame."

For all its apparent potential as a grand showdown, the third hearing accomplished very little. Alan Cranston said the committee had an obligation to explore this issue, so the whole Senate would have a record to work from. At least within the committee, no votes were changed. Auletta, cool and professional, provided confirming evidence for those who already opposed the nomination. To those who already supported it, the testimony was beside the point.

For his part, Adelman stuck doggedly to his "can't remember" story, which his opponents found unbelievable and his supporters quietly overlooked. In the face of Auletta's phone records, which listed a call to Adelman's office, he might have conceded that the conversation probably took place. He might have aborted the whole

controversy by conceding that even though Auletta, a well-respected reporter, understood him to say "sham," Adelman was really trying to convey the idea that he had expressed so often to the committee, that "the SALT process" had failed. Out of stubbornness or obtuseness, or his own sense of principle, he had refused to play the nuclear-catechism game with Claiborne Pell. In the same way, he was refusing to play along now.

The committee voted the same way it would have if the confrontation had never occurred: nine against Adelman, eight for. Then, by a vote of 14 to 3, it passed the nomination on to the full Senate, instead of attempting to keep it bottled up in committee.

BY THIS TIME, KENNETH ADELMAN WAS STARTING to feel low. Once or twice in each President's term, there is an official who gets caught in the cross fire, who becomes notorious for reasons that have only a little to do with mistakes he may or may not have made. Hamilton Jordan (accused of snorting cocaine, and later cleared) was such a person. It was dawning on Adelman that he might be another.

He was showing up in editorial-page cartoons, a shorthand symbol for an administration that appointed a tree-hater secretary of the interior and an anti-arms-controller ACDA director. One Saturday in March, the whole family was at La Guardia airport for a trip to Florida to visit the grandparents. His younger daughter, aged five, ran up beaming. She had spotted a picture of her father in *The New York Times*. "Look! It's Daddy!" she said happily. Adelman's face fell as he read the story, which described the latest charges that he was deceiving the Senate.

Adelman professes a zeal for gospel music. More and more often, the windows of his apartment shook late at night as the songs of James Cleveland came booming at full volume from his stereo set. Adelman played one of Cleveland's songs over and over again:

*I . . . don't feel . . . NO WAYS tired
I've come too far from where I've started from
Nobody told me that the road would be easy
I don't believe He brought me this far to leave me.*

While he recognized that he had made the occasional misstep, he saw himself as the victim of a political system run amok. The Senate had the obligation to determine his views about arms control. Fine: he'd be happy to argue SS-20s with Paul Tsongas all night long. But why the circus atmosphere, the search for hidden motives? Why would seventeen United States senators show up for a hearing about a two-year-old *Daily News* column, when only one senator—Boschwitz—asked intelligent questions about the articles he had written? If these liberals really cared about arms control, why were they letting ACDA drift without a director?

With so many people criticizing him, he was denied the

luxury of modesty. Donald Rumsfeld lobbied unselfishly on his behalf; so did Senator Bennett Johnston, of Louisiana, who had worked with him for four months at a UN special session. But with these and a few other exceptions, Adelman was left to blow his own horn. He ended up blowing too hard. He referred to the "116 articles" that laid out his views, even though only a dozen touched on arms control.

What he had learned about the U.S. Senate made him a more skeptical citizen. But what he had endured so far made him more determined to persevere and win. He would win for Ronald Reagan, win to save his reputation, and win to do something more than talk about arms control.

While full of this brave resolve, Adelman suddenly hit dead bottom. It happened in mid-March, because of the Rowny memorandum.

THE EPISODE WAS THE MORE PAINFUL BECAUSE Adelman could see it coming. Two days after he was nominated, Adelman had gone to Washington for meetings. There he talked briefly with Edward Rowny, who was bustling away because he was already late for a lunch with Henry Jackson. Rowny gave Adelman a paper and asked him to read it. Adelman looked at it long enough to know it should go straight to Robin West.

West, another friend from Adelman's days in the Defense Department, had since become an assistant secretary of the interior. He had no interest in getting into the arms-control business, which is what made him indispensable to Adelman. Adelman had seen enough goings and comings in government to know that personnel questions could be the nastiest and most entwining. He told George Shultz, one day after his nomination, that he would not do anything about appointments until he was confirmed. He refused to tell his personal secretary at the UN whether she should prepare to move to Washington. He refused to tell Jon Gundersen, the Foreign Service officer who handled his schedule during the hearings, whether there would be a place for him at ACDA. When people volunteered names and suggestions, as they inevitably did, he promised to consider them after his confirmation, and he passed the names to his repository, Robin West. In a note written a few days after his nomination to Kenneth Dam, the deputy secretary of state, Adelman said that West's "mandate is to investigate and evaluate the ACDA scene, but decide nothing, say nothing one way or the other, and make no bureaucratic waves whatsoever."

The piece of paper from Rowny was clearly material for West. It consisted of petty bureaucratic wheedling ("Wives' travel to negotiations—necessary") and wildly indiscreet remarks about ACDA staffers and members of Rowny's own delegation at the START talks. One of the five members was "OTL [out to lunch], abrasive; doesn't want to learn"; three others stood for "progress at any cost." Adelman wrote on the cover, "Robin—*Eyes Only!* Ed

Rowny's [sic] very confidential real views on people. Thanks! Ken."

Later that day, Rowny called Adelman's secretary in New York and gave her four other names of possible appointees. Adelman wrote three of them on the last page of the Rowny memo, omitted the fourth, whom he knew well enough to judge that he would not be interested in a job, and added another name that had occurred to him. Then he shipped the package to Robin West.

The whole tone of Rowny's memo confirmed what the conservatives generally thought about the man. For his guts and principle in resigning from Jimmy Carter's SALT II delegation, he was respected. For his political judgment and organizational savoir faire, he was not. Adelman knew that if it ever came time for him to select appointees, Rowny's brain would not be the first he would pick for advice. Consistent with his reputation, Rowny carelessly lost track of the memo within ACDA, from which it promptly leaked to the Foreign Relations Committee.

The committee learned about the memo early in March, after it had already voted against the nomination. That the memo made Rowny look bad there was no doubt; but did it say anything about Adelman? In his testimony, Adelman had been asked time and again whether he was planning a purge of ACDA. No indeed, he replied; "I have not addressed the personnel situation *at all*." [Emphasis added]

Did this make him a liar? Adelman thought not. Each time he had spoken so categorically, he had been responding to a particular question—for example, whether he had prepared to fill the many vacancies among ACDA's assistant directors. But to senators already skeptical of his "don't remember" answers, this seemed another too-convenient lapse. Why the sweeping overstatement? Why not a plain description of Robin West's role? The smoking gun had at last been found.

In the middle of March, the committee requested an official copy of the Rowny memorandum and associated documents. Adelman volunteered more than they originally asked for. On March 23, in defiance of an Administration request, the committee voted to release the memo, with the names whited out. As when he had basked in a feeling of contentment after his first hearing, before he saw the TV news, Adelman felt secure that the memos would prove his case. Then he saw the first stories come over the wire: they were thick with "credibility problem" and "mislead."

ADELMAN BEGAN TO FEEL THAT EVENING THAT THE tide was running away from him, that the cumulative toll was becoming too great. Inside the Administration, people tried to buck him up. It was so unfair, they told him at White House meetings, because the deeper you went into the personnel question, the better his decisions looked. It was unfair, they said, that he was taking punches really aimed at the President. But with the excep-

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tion of Reagan himself, no one in the government was saying these things in public.

Adelman developed a nervous tic. He pulled constantly at his hair. As his wife became more energetic and combative, he became more quietly resigned. When they were in different cities, he sometimes could not bear to keep his promise and tell her all the news, good or bad. He said he could feel things slipping away.

He carried two items with him for inspiration. One was a cartoon from the *Richmond Times-Dispatch*, showing members of the committee in a hear-no-evil pose as Adelman innocently says, "We feel that in the face of massive Soviet arms buildups, the way to maintain peace is to remain strong." The other was an index card with several quotations from Shakespeare. One was an exchange from *Othello*, between Cassio and Iago, which Adelman had transcribed, underlining the concluding portion:

Cassio: Reputation, reputation, reputation. Oh, I have lost my reputation! I have lost the immortal part of myself, and what remains is bestial. My reputation, Iago, my reputation.

Iago: . . . Reputation is an idle and most false imposition, oft got without merit and *lost without deserving. You have lost no reputation at all, unless you repute yourself such a loser.*

Twice in March he sent messages to the White House. He had taken this assignment to serve the President, he reminded his superiors. If his persistence stopped being a service, someone should be sure to tell him so.

All along, he considered the clock his enemy. Day after day, there was a new story about purges and deceptions: when would the Senate's majority leader, Howard Baker, cut it off by bringing his nomination to the floor? On March 25, the Senate would begin its Easter recess. Adelman dreaded having the case drag on past the recess, but it did.

Yet this last delay seemed to work in his favor. Since the middle of February, Tsongas and Cranston had been saying that the case would finally be decided by the "grass roots." The letters and telegrams would start pouring in, the people's voice would be heard. Those who opposed Adelman would exert more leverage. Those who were undecided would topple into their camp. If the public seemed not to notice the vote, most senators would probably give the President and his man the benefit of the doubt. But if it became a big, well-publicized contest on war and peace, Adelman's opponents thought, they stood a better chance.

What most of the senators discovered when they went home was resounding indifference to the case of Kenneth Adelman. Paul Tsongas received several hundred letters, but a general flow of mail had never started. Newspaper editorials had overstated the degree of local interest in the case. One northeastern Democrat climbed onto a plane back to Washington and saw a friend. They started talking about Adelman, which was the first time the senator had heard the subject mentioned for ten days.

Tsongas and Cranston said the problem was timing: the nuclear-freeze movement, a logical source of support, was concentrating on the House of Representatives, where the freeze resolution was coming to a vote. The Rowny memorandum, which looked for a time as if it would keep generating news stories for weeks, had faded faster than expected. Tsongas could no longer plausibly argue to reluctant colleagues that they would wear Adelman like an albatross if they voted for him. As far as the other senators could tell, not many people would notice.

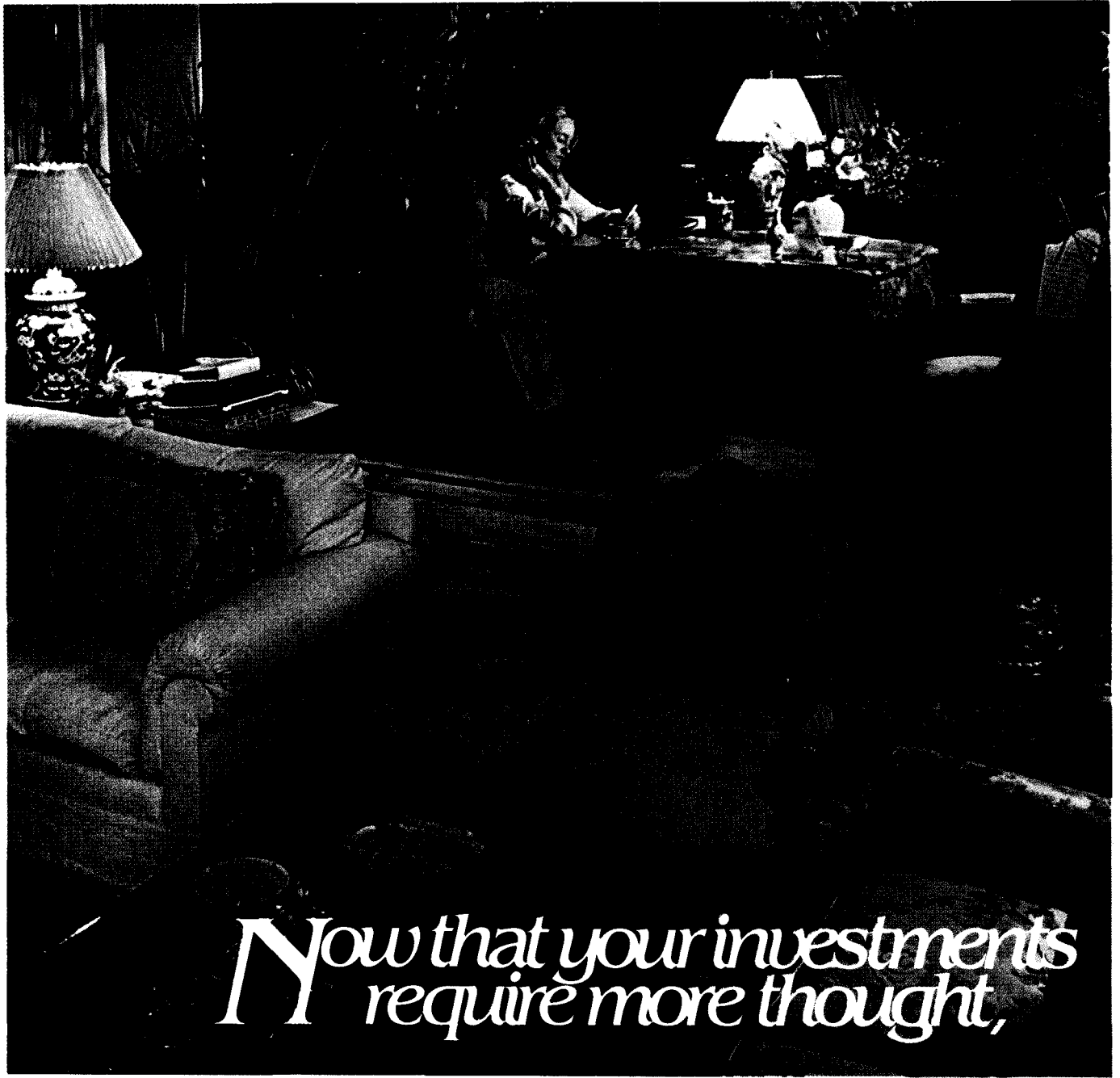
AFTER THE EASTER RECESS, PAUL TSONGAS disclosed a tactical retreat. He agreed to drop his threat of a filibuster, in return for a guarantee of three full days' debate on the questions of war and peace. This was a concession to the reality his head counts revealed. The list of likely anti-Adelman votes never contained more than forty-six names. That was five short of what it would take to beat the nomination outright, but six more than were necessary to keep a filibuster alive. But several senators who were ready to vote against Adelman were also against a filibuster. Tsongas thought that his chances would be best if he tried to fight it out on the floor.

Most Democrats had lined up as No votes, most Republicans as Aye. The swing votes seemed to lie with the liberal Republicans, who would be torn between their loyalty to the party and their "commitment to arms control." The more partisan the debate sounded, the harder it would be for them to vote against the Administration. Therefore, Adelman's opponents agreed not to do what some had originally intended: to cast the debate as a frontal assault on the Administration's arms-control policy.

It became, instead, a muted argument about the standards of competence against which Adelman should be judged. Most Democrats argued that at this delicate time, for this sensitive job, concerning this transcendent issue, something more was needed than Kenneth Adelman could bring to the task. They would be helping the President, the nation, and the Western alliance by forcing Ronald Reagan to make another choice.

Most Republicans, in response, made a narrow, legalistic case in favor of granting the President his prerogative. For example, the members of the Foreign Relations Committee who voted for Adelman said in their dissenting report, "Only in those instances in which a nominee is found to be clearly unqualified or unsuited for a position of special trust and responsibility should the Senate refuse to consent to the President's choice."

So for three days the "great debate" followed its predictable course. Senators Percy and Pell, the floor managers for the debate, sat wearily at their tables, coordinating the flow of speakers pro and con. Another senator sat as presiding officer, and one other was giving his speech. That was it: average attendance until the final afternoon was



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four. A dozen staff members sat on couches along the back wall, taking notes for their employers.

There was little progression during the three days, virtually no interchange of views—that is, no “debate” in the normal sense. Paul Tsongas gave a long discourse on how poorly the whole affair was playing in Europe; Charles Percy said again and again that the Administration had promised to push ahead with the two stalled treaties if Adelman was confirmed.

The closest approximation to a debate was a sharp exchange between Tsongas and John Tower. Tower had derided the idea that the Senate should second-guess the President on his national-security decisions. Tsongas replied that he had seen someone greatly resembling the Senator from Texas on television second-guessing the President's plan for the MX missile.

The one senator who seemed to have his heart in it was Dale Bumpers, of Arkansas, recently resigned from the presidential race. Using a popular metaphor, he said that with Adelman the Administration had offered up the “James Watt of arms negotiations.” His speech contained more personal barbs than most others—was more in the tone of “Rafshooning the Armageddon”—and was delivered in the style of rousing stump demagoguery. Most of his colleagues wearily trod through their texts.

The debate had started on a Tuesday; even by then, Adelman's opponents knew they were going to lose. Paul Tsongas visited the press gallery that evening, saying that the whole point of the exercise had been to raise the visibility of the arms-control issue. If a surer sign of impending defeat was needed, it came soon afterward. The anti-Adelman strategists had assumed that if the vote was very close, they would lose Sam Nunn, of Georgia, who was reluctant to hand the President this direct defeat. But if his vote didn't matter, they expected him to stay with the party. Conversely, if the vote was close, they expected Daniel Patrick Moynihan, of New York, to vote with most of the other Democrats. If it was a throwaway, he seemed certain to vote Aye. He had roots in the same neo-conservative New York City crowd that so enthusiastically backed Adelman, and he fought the same battles at the UN. Why needlessly antagonize these, his friends?

Late in the debate, Nunn rose to speak against Adelman, and Moynihan rose—to say nothing. He inserted his whole speech into the record, where it proved to be a defense of the nomination. It was a signal that everyone expected Adelman to win.

When the vote came, it was 57 in favor, 42 opposed, Robert Packwood, of Oregon, not voting. It was a more comfortable margin than most people had predicted; nearly all of the swing votes had gone Adelman's way. Alan Cranston said it was a sad day for arms control. Paul Tsongas congratulated the President on his Pyrrhic victory.

“A few more like this, and I don't think there will be much left of NATO,” he said. “If I were Andropov, I wouldn't do anything but mumble ‘Adelman!’ ‘Adelman!’ through Europe.”

Viewed one way, the whole affair was a triumph of the American constitutional system. The Senate, fulfilling its solemn obligation to offer advice and consent on nominations, peered closely into Adelman's character and his beliefs before pronouncing him fit to serve. More than twenty senators took the floor to join the “great debate” on Adelman, ACDA, and the largest questions of human survival in the nuclear age. The fourth branch of government, the press, devoted remarkable time and space to coverage of the contending views of arms control.

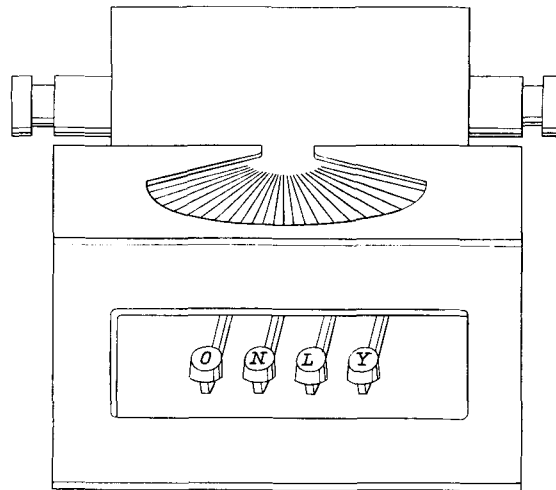
Yet when it was over, it was hard to think of an interested party who had benefited from the proceedings. Adelman was plucked from comparative obscurity only to be tarred with a reputation for incompetence and deceit. The Reagan Administration found the votes to force him through the Senate, but it could hardly contend that its policies had been endorsed or its standards of excellence acclaimed. The arms-control bureaucracy, in turmoil to begin with, was further buffeted by the three-month uproar. The liberals sniped at Adelman without managing to stop him; only the conservatives seemed no worse off at the end of the fight. Each side was upholding its vision of the national interest, but the result was a squalid argument that further emphasized the depth of the ideological divide.

Within minutes of the Senate vote, Kenneth Adelman was on the phone. From New York he called each senator on the Foreign Relations Committee. He was eager to talk about arms control, he said. Could he come by for a visit next week?

The following morning, he went to Washington to give a pep talk to ACDA staff, and then went back on the shuttle to New York. His apartment was jammed with flowers sent by friends and fellow diplomats. He began hanging signed originals of editorial cartoons, while his wife phoned in an offer on a house in Virginia. Late into the night, the windows shook from an upbeat gospel album that Adelman had just discovered in a Harlem record store. His daughters, now accustomed to confusion, slept oblivious through the din.

Adelman's life was back on keel. In the next few weeks, he would be talking pleasantly with the senators who had denounced him, and inviting the embattled congressional staff members to meet him over sherry. Bygones would be bygones.

For three months, the two sides had fought as if humanity's survival turned on the outcome. As soon as it was over, they acted as though none of it had really mattered at all. □



With most jobs being created at the top and the bottom of the ladder, America may have difficulty remaining a middle-class society

THE DECLINING MIDDLE

BY BOB KUTTNER

THERE IS A GOOD DEAL OF EVIDENCE THAT JOB OPPORTUNITIES in the United States are polarizing, and that, as a result, the country's future as a middle-class society is in jeopardy. What the decline of the middle class would mean to the country can only be guessed at, but it presumably would be unwelcome to the millions of parents who hope that their children can move up the economic ladder; to American business, which needs a middle class to consume its products; and to everyone who is concerned about fairness and social harmony.

As the economy shifts away from its traditional manufacturing base to high-technology and service industries, the share of jobs providing a middle-class standard of living is shrinking. An industrial economy employs large numbers of relatively well-paid production workers. A service economy, however, employs legions of keypunchers, salesclerks, waiters, secretaries, and cashiers, and the wages for these jobs tend to be comparatively low.

This increasing concentration of jobs at the extremes of the country's range of earnings is an issue quite distinct from high unemployment—the most visible threat facing the work force today. It is also an issue distinct from the country's poor rate of economic growth. Restoring growth may make “everyone” better off, statistically, but growth by itself has little bearing on the distribution of wages. Moreover, the government's existing income-support programs simply are not designed to address this new prob-

lem. The fact is that statistically, most dollars of government transfer income go to the elderly, through Social Security and Medicare. Thus, even counting all the welfare checks and food stamps for the poor, and all the dividend coupons, interest payments, and capital gains for the rich, the working-age population still depends on jobs for fully 85 percent of its income.

During the three decades after World War II, real income grew steadily, along with the number of good jobs. Between 1958 and 1968, manufacturing added 4 million jobs; state and local government added another 3.5 million. The child of a working-class family who graduated from high school in the 1950s and 1960s could choose among a number of relatively well-paid jobs—precisely the jobs that are disappearing now. Manufacturing, which pays on average almost three times the minimum wage, added fewer than a million jobs between 1968 and 1978, and has lost nearly 3 million jobs over the past four years. Construction and production work, taken together, account for about one job in eight today, compared with one in four in 1950. According to Barry Bluestone, a professor of economics at Boston College and co-author of the book *The Deindustrialization of America*, “The pattern of wages in the old, mill-based economy looked just like a normal bell curve. It had a few highly paid jobs at the top, a few low-wage jobs at the bottom, and plenty of jobs in the middle. But in the new services economy, the middle is missing.”

The erosion of the middle of the labor market is easy to misinterpret, because its roots are multiple. During the 1970s, the entry into the work force of an unprecedented

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number of women and of young adults born during the baby boom resulted in too many workers for the jobs available, and depressed wages. The decline of the middle also has something to do with the explosive growth in world trade since 1960. As manufacturing technologies have become more mobile, and multinational firms more footloose, production jobs have migrated from the U.S. to countries where wages are low. In addition, technology itself has helped to provoke the shifts in the job market. For example, fewer American workers would have been needed to make steel in 1980 than in 1960 even if the pressures of global competition had not been a factor, because new machines have made many of their tasks redundant. Finally, the high rate of unemployment caused by these trends has tended to drive wages down further, especially at the low end, since it forces unskilled workers to compete for their jobs with unemployed people who are willing to do the work for less.

Although demographic shifts, stepped-up world trade, unemployment, and especially the advance of technology all have had an effect on the shape of the job market, middle-level jobs have been disappearing ultimately as a result of the ways in which technological gains are being distributed. When a machine replaces a production worker, both the firm and consumers as a group benefit. The loss falls mainly on the worker who is displaced. If that loss is generalized to millions of high-paid workers, they suffer as a group, and the economy as a whole suffers a loss of worker purchasing power. Thus the lack of a mechanism to distribute some of the financial gains from technology to the work force comes back to haunt the entire economy.

As it happens, production work is becoming heavily automated at a time when the most powerful agents of distribution—the trade-union movement and the public sector—are in decline. There is nothing intrinsic in assembling cars, mining coal, or pouring molten steel that requires high wages. These jobs *do* pay well mainly because of the efforts of strong unions. Just as high wages are not a necessary characteristic of factory work, low wages are not a necessary characteristic of a service economy. But because unions have organized few fast-food workers, typists, bank clerks, or even computer assemblers, most of the new service jobs that are replacing factory work pay far lower wages. And the chief realm of a service economy in which wages *are* good—public service (teaching, social work, nursing, and so forth)—can no longer be relied on to take up the slack. Although the number of jobs funded by state and local government grew substantially throughout the 1960s and 1970s, it peaked in 1980, and had fallen by 200,000 at the end of 1981—the most recent year for which figures are available. Whether or not one favors strong unions or the pervasive presence of government in society, unions and government undeniably have operated as instruments of a relatively egalitarian distribution of wages. As their influence declines, so does their impact on the national pattern of earnings.

LABOR STATISTICS SHOW THAT WAGE AND SALARY income is becoming more unequally distributed in the economy as a whole, and in service industries in particular. It also turns out that the fastest-growing industries are those with the most extreme wage spread.

The Bureau of Labor Statistics ranks earnings in ascending order by percentile. Thus, a worker at the eightieth percentile makes more money than 79.9 percent of the rest of the population. A study conducted in 1980 by two economists at the Department of Labor, Peter Henle and Paul Ryscavage, found that between 1958 and 1977, the earnings of men at the twentieth percentile increased by 130.6 percent (with no adjustment for inflation), but the earnings of men at the eightieth percentile increased by 206.7 percent. The book *Services: The New Economy*, by Thomas M. Stanback, Jr., and three colleagues, published in 1981, concludes, "For services as a whole, the most important observation is that there tends to be a heavy concentration of employment in better-than-average and in poorer-than-average jobs. In contrast, in manufacturing and construction, the distributions are more heavily weighted toward medium and above-average jobs."

Statisticians at the Department of Labor have been comparing the salaries paid in the twenty fastest-growing occupations with those in the twenty that are in the sharpest decline. Although their results will not be released in full until later this year, Ronald Kutscher, an assistant commissioner of the Bureau of Labor Statistics, says that workers in the fastest-growing industries are earning, on average, \$5,000 a year *less* than workers in industries that are declining or that are growing most slowly.

There is, of course, independent evidence of widening inequality in America, apart from changes in the distribution of jobs. The number of Americans living in poverty, which dropped to about 23 million in 1974, is greater than 30 million today. The 20 percent of households in the country's highest tax brackets take 41.9 percent of all income paid in the U.S.—the highest share in two decades. Paradoxically, the entry of more women into the labor force has exaggerated the inequality of family incomes. On average, the working wife of a man who makes \$50,000 earns \$5,000 more than the working wife of a man who makes \$10,000. Homeownership, for years the badge of membership in the middle class, has become a nearly impossible feat for those who do not have a house already. A new house of average price is beyond the budgets of more than 75 percent of all households.

One might fault the Reagan Administration for cutting taxes at the top and social programs at the bottom, but the widening polarization of the labor force remains a phenomenon distinct from these policies and largely ignored in the national debate. Long after the Reagan Administration ends, this problem will plague the American economy.

In 1982, the Department of Labor ranked the number of actual job openings in 1980 by category. These openings reflect turnover as well as net job growth. The top fifteen

job categories, with a single exception, are ones that middle-class parents hope their children will avoid:

Job	Openings, 1980
Retail salesclerks	757,750
Managers and administrators (not elsewhere classified)	711,793
Cashiers	617,973
Secretaries (not elsewhere classified)	599,216
Waiters and waitresses	465,628
Cooks (except private household)	437,341
Stockhandlers	358,393
Janitors and sextons	333,309
Bookkeepers	304,789
Miscellaneous clerical workers	299,940
Nursing aides and orderlies	284,332
Child-care workers, private household	277,525
Building-interior cleaners	259,528
Typists	250,276
Truck drivers	245,377

Of the top fifteen, only one, the grab-bag category "Managers and administrators (not elsewhere classified)," suggests a well-paid line of work. The first profession to appear on the department's roster is job number thirty-six, accountants, with 140,108 openings. Far down on the list come computer programmers (30,953) and electrical engineers (23,089). According to the most recent comprehensive forecast of the Bureau of Labor Statistics, released in 1982, the economy will generate some 19 million new jobs between 1980 and 1990, about 3.5 million of which will be "professional and technical." Low-wage service and clerical work will account for almost 7 million new jobs.

Within the manufacturing sector, the job structure of the one major growth industry—microelectronics—is highly stratified. Computer scientists and engineers typically have more than a college degree and earn \$30,000 a year and more. The workers who assemble computers, however, earn about \$12,000 a year. The number of skilled technicians whose wages fall between these two extremes is surprisingly small. The rate of productivity of the electronics industry is accelerating so fast, in fact, that electronics is not expected to be an important source of new production jobs, good or bad. The more significant effect of the computer on work is being realized not in the computer's manufacture but in its application. The Bureau of Labor Statistics projects that the U.S. will require about 120,000 more computer programmers and 125,000 more electrical engineers during the next decade, but it will require some 3 million more secretaries and office clerks.

By 1990, 600,000 more janitors, 500,000 more salesclerks, and 400,000 more fast-food workers will also be needed. To be sure, the economy has always included low-wage service jobs, but in the past it also included a larger middle range of relatively well-paid production jobs. These were the jobs that created the postwar, blue-collar middle class. Today, a welding job in an automobile plant is per-

formed more cheaply by a robot or a foreigner; that job once paid somebody \$12 an hour, and there are few openings at \$12 an hour in restaurants, hotels, or computer-assembly plants.

Given the 10 percent unemployment rate, it is tempting to conclude that lots of low-wage, "entry-level" service jobs are just what the economy needs. Unfortunately, although these jobs do provide an entry into the work force, few offer opportunities for advancement. The fast-food industry, for example, employs a small number of executives, and hundreds of thousands of cashiers and kitchen help who make about \$3.50 an hour. With some variation, keypunchers, chambermaids, and retail sales personnel confront the same short job ladder.

STATISTICS DO NOT DO JUSTICE TO THE STORY. A LOOK at actual offices, stores, and factories is even more revealing. The Boston area, with its heavy concentration of financial services (banking, credit reporting, real estate, and so forth) and high-technology firms, can serve as a model of where the economy as a whole is headed. To get a practical glimpse of the emerging labor market, I interviewed personnel executives at several companies there.

The work force of financial-service industries grew 32 percent, to 5.4 million, between 1973 and 1982—a period when durable manufacturing lost workers. At Blue Cross Blue Shield, which falls within this sector of the economy, the work force grew 46 percent, to 88,000, between 1970 and 1982. As in most insurance companies, the main activity of Blue Cross Blue Shield is collecting premiums and paying claims. Computerization and remote data transmission have made these tasks more routine and have allowed them to be performed almost anywhere.

The company's offices in Massachusetts employ about 4,000 people, of whom some 400 are rated managers, another 1,000 are rated professionals (attorneys, actuaries, programmers, doctors, nurses), and some 2,600 are rated clericals. According to Theron R. Bradley, who oversees employee training for Blue Cross Blue Shield of Massachusetts, computerization has not had the same effect on everyone who works for the company. For professionals like him, it has provided new possibilities. Bradley says, "As the manager of training, if I wonder who in the company has taken which courses, I can have the computer research that at the touch of a button. If I need to analyze the results of testing, I can have the computer produce research that I could not have imagined allocating the resources for a short time ago. Our accountants can now spend their time doing what they were trained to do—setting up accounting systems and interpreting the results. In the past, a lot of their work was glorified bookkeeping." At the same time, however, the computer has had a different effect on Blue Cross Blue Shield's large clerical force. Bradley says, "In the past, the lowest six levels of our clerical structure

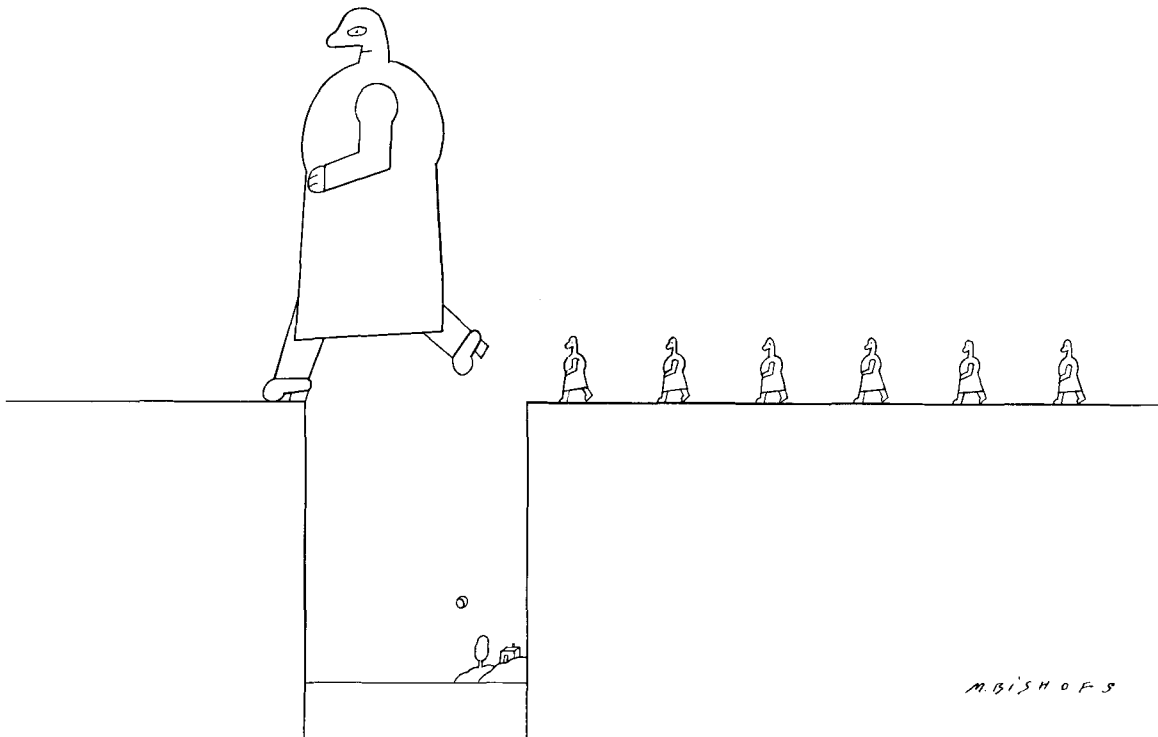
looked like an inverted pyramid. At the very bottom were jobs like filing, sorting, mail delivery, and basic data-entry jobs. You'd almost have to try *not* to be promoted in order to avoid rising through the clerical ranks. Most people did get promoted. With good oral and written communication skills, you could move fairly easily into a supervisory or junior management job. Those senior clerical jobs are disappearing, because the computer is taking over so much of the decision-making. We have a lot more routine jobs at the bottom, and a few more complex jobs at the top, where you need someone to analyze hundreds of pages of data."

Blue Cross Blue Shield's largest job category is that of claims examiner. The company recently opened "outreach" offices in the towns of Plymouth and Rockland, outside

productivity. On average, the clerks are paid between \$4.50 and \$5.75 an hour, but wages are adjusted every two months to reflect each clerk's output. Blue Shield provides a fifteen-minute paid lunch break and a week of vacation after one year. It provides no health insurance.

When the company announced its plans to move to Plymouth, a Blue Shield Day was held at a local vocational high school to recruit applicants. Bradley says, "We locate these offices in areas of high labor demand so that we don't have to outbid everybody else's wages. We have no trouble finding people. Every time we open one, we are swamped with applications."

According to one of the clerks at Plymouth, who requested anonymity, few of the women who began work



Boston, to house the newly organized Blue Shield claims department. The work is part-time, in order to attract mothers of young children, students, and others who will accept reduced hours. As it turns out, all of the claims examiners on the day shift at Plymouth are women. The day shift runs from eight until two. "You can drop Junior off at school, and drop down to our office at the local shopping mall," Bradley explains. Each clerk sits at a computer screen with a pile of claims, and types in the subscriber's name or number, the code number of the medical procedure claimed, the fee, and the identification number of the doctor. The computer verifies that the subscriber is covered. A different department handles more complicated claims, and still another mails out reimbursement checks.

A claim takes about a minute to process, and a good clerk can dispatch 300 a day; the computer keeps track of

with her at the office when it opened, in March of 1982, are there today. The most demoralizing thing about the job, she says, is the isolation. Virtually all communication is between the clerk and the machine. Since pay is based on output and the job itself requires no human interaction, there is every incentive to keep social conversation to a minimum. "Last Christmas," my informant says, "they organized a little office party. They had a 'Christmas Grab,' where everybody picks a name out of a hat. You bring in a little gift for somebody and they bring one in for you. We realized that nobody knew anyone else's name."

The new system has indeed improved the productivity of the company's claims department, but more intensive use of technology and higher output have not translated into better jobs. Despite the space-age technology, each clerk can be trained in only four weeks. The work is more routine, and the company's labor costs are lower.

IT IS INTRIGUING TO CONSIDER WHETHER THE LOSS OF middle-income jobs reflects technological imperatives or merely management preferences. Much has been written on the tendency of technology to degrade work, but there are enough instances to the contrary to suggest that managers have substantial latitude in how they choose to reorganize work.

Banks provide examples of technology both making work more tedious and making work more challenging. Like armies, banks divide their troops into officers and enlisted personnel. Behind every officer is a cadre of back-room clerks. Although in theory the lowliest teller can aspire to be an officer, in practice there is little opportunity to move up from the clerical force into the officer ranks. For example, First National Bank of Boston, the nation's seventeenth largest bank, hires about a hundred people a year for its loan-officer-development program. As many as ten may be promoted from within. Most new loan officers, however, are recent graduates of colleges or business schools. The competition is keen, and the bank will pay more than \$30,000 to attract a promising MBA holder. Clerical workers at First National outnumber officers by more than two to one. The 621 tellers earn an average salary of \$6.59 an hour, or about \$263 a week, and below that rank there are thousands of other, lower-paid clerical jobs.

One job that has become more routine as a result of technology is that of money-transfer clerk. Like most banks, First National has automated its money-transfer operation, plugging into a computer-connected network. When a customer requests that money be transferred from one bank to another, the clerk punches up a standard format on the computer terminal, checks whether funds are available, enters the number of the bank to receive the funds, and electronically consummates the transaction. According to Steven Bavaria, the bank's vice president in charge of personnel, "We are able to use more junior people for transfers since that was automated. We even use some part-time high school students. Because we build more safeguards into the system, the people operating it can concentrate all their attention on five or six variables: the account number, the amount of money being transferred, the name of the bank, and so on, rather than having to type and proofread an entire Telex message."

In contrast, the computerization of First National's letter-of-credit department has upgraded the status of several dozen employees. A letter of credit is a document from the bank to a foreign supplier's bank, guaranteeing payment for goods that are about to be shipped. Formerly, processing a letter of credit involved assembling pieces of paper, with a chain of clerks verifying shipping and credit documents and typing forms. Now the bank's letter-of-credit department is mostly what Bavaria terms "junior professionals," each with a computer terminal. "The same person can review the documents, create the file, send the letter, and, when we have verification that the order has been shipped, authorize payment," Bavaria says. Most let-

ter-of-credit employees earn between \$300 and \$400 a week, and the position is sometimes a way station in the officer-training program.

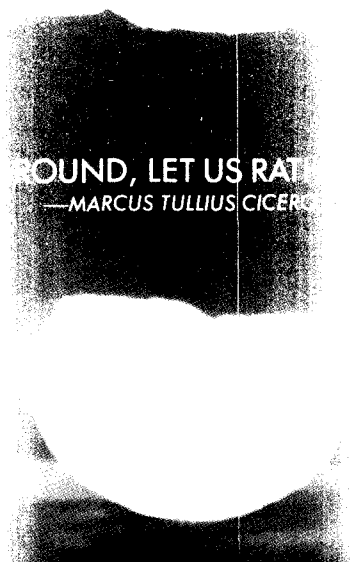
Gross statistics on the earnings of clerical workers nationwide suggest that this kind of upgrading is unusual. The vast majority of clerks, men and women, earn less than \$300 a week. For full-time female clerical workers, the average weekly salary in 1980 was about \$220. Of the total 17 million female clerical workers, fewer than 500,000 earned as much as \$400 a week. Fewer than a million earned more than \$335. The study by Henle and Ryscavage indicates that clerical wages are becoming increasingly skewed to the low end of pay scales.

Retail sales is another growth industry in which wages are clustering more and more at the extremes. The number of people working in the Department of Labor's "wholesale and retail trade" category has grown from 8.7 million in 1950 to more than 18 million today. In 1981, non-supervisory workers in trade and retailing earned an average of about \$150 a week. The 2.4 million salesclerks earned an average of \$178 a week, and the 410,000 manufacturers' sales representatives earned an average of \$434.

In theory, the shift to an economy based on services and information ought to be compatible with the equitable distribution of income and jobs. Substituting technology for human labor makes the country as a whole richer. Some economists argue that as the economy grows more productive, technology will gradually eliminate many routine, dead-end jobs, replacing them with high-skill positions and more leisure time for all. The market does not necessarily convert rising productivity into an acceptable distribution of income and leisure, however. The pattern of development in much of the Third World demonstrates that it is quite possible for an economy to attain a high rate of growth based on rapid technological progress, and still function as a society in which one half of the work force waits on the other half, and makes a good deal less. Low wages tend to foster more low wages. If you have to pay a welder \$12 an hour, it may make economic sense to substitute capital for labor and build an automated welding machine. But if fast-food workers cost only \$3.50 an hour, automation may be a long time coming. It is often the high-paying jobs that are replaced by machines, not the low-paying ones.

FEW ECONOMISTS EXPECT THE BOOMING high-technology field to be an important source of new jobs: its productivity is too high. According to projections by Data Resources, Inc., a corporate consulting firm, the entire high-tech industry, broadly defined, will provide fewer than a million new jobs over the next decade. The American Electronics Association projects that the number of jobs for skilled electronics technicians will grow by only about 15,000 a year. Moreover, the relatively low-skill assembly jobs in microelectronics plants, which

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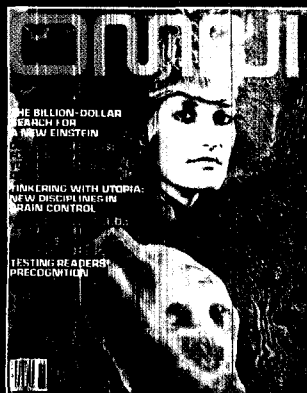
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do not pay well to begin with, are rapidly being automated or shifted to countries in which wage scales are even lower.

The Hewlett-Packard Company—a California-based manufacturer of computers, computer software, scientific instruments, and testing devices, with assets totaling about \$4.3 billion—offers a good example of technology's effect on the high-tech labor force. The company prides itself on "the Hewlett-Packard way"—an informal style of management with few barriers between the executive suite and the shop floor.

The medical-products group, one of five major corporate divisions, makes an array of sophisticated electronic monitoring devices used by hospitals to analyze blood chemistry, to monitor fetal functions, and to check heartbeat, blood pressure, and oxygen intake. It employs some 2,700 people in two plants near Boston. During the past two years, the number of engineers and computer scientists at the company has grown by about 1,250 nationwide, but few technicians or assembly workers have been hired. Despite the group's steady growth in sales, averaging between 15 and 20 percent a year, productivity has also been rising so rapidly that the company has barely avoided layoffs.

Hewlett-Packard's large plant in the suburban town of Waltham occupies a long, low brick building. The shop floor is quiet, clean, and well lit. There is no assembly line. In the main section of the floor, employees sit at benches attaching the final few components to printed circuit boards that have been produced mainly by machines elsewhere in the plant. James Phelps, the group personnel manager, says, "For years, loading circuit boards was like building the pyramids. You needed armies of human labor. All the components were hand-inserted. Today you can design a circuit board by computer, and the same computer program will load the machine that produces the board, put the components into the right sequence, and produce most of the board."

At the end of the long shop floor is the sequencing machine—about fifteen feet long and five feet high. In bins above the machine are supplies of dozens of different components. Following a computer tape, the machine loads the components in proper sequence onto what look like ammunition belts for a Gatling gun. The belts then feed the circuit-board-inserting machine, and out come nearly finished circuit boards, with capacitors, resistors, and diodes all in place. Only a few parts remain to be inserted by hand. One worker tends the sequencing machine. She was trained for the job in a few days. A second semi-skilled worker tends the inserter.

Automation is evident, and equally impressive, elsewhere in the plant. A printed circuit board begins with a layer of inert fiberglass sandwiched between two sheets of copper plate. Holes are punched into the blank board to receive the components. In the "printing" of circuits onto the board, an ink screening process is used to indicate the tracks that will eventually be etched into the board. In the

past few years, machines have been introduced that plate the copper, punch the holes, and even do the screening. In every case, a few machine tenders now do the work of several production workers, and they need not be highly skilled technicians. Workers were trained to use the automatic screening machine in a single day; there was no up-grading of status, job description, or pay.

According to James Phelps, "We've peaked in terms of our need for the classical technician. The machinery is more and more self-diagnosing. There's less of a judgment factor. The computer spits out an instruction to change such-and-such a component, and you do it. We can upgrade a \$5-an-hour assembler to a \$6- or \$7-an-hour junior technician with little advanced training. A few years ago, we were recruiting skilled technicians as aggressively as we're recruiting engineers today. We're not doing it now. Organizations that train technicians should realize that they're preparing people for a smaller and smaller marketplace."

A FEW MILES AWAY FROM HEWLETT-PACKARD, THE GenRad Corporation makes electronic testing instruments, which are used in quality-control operations throughout the electronics industry. According to Richard Cambria, GenRad's vice president for personnel, the instruments are having the same effect on GenRad's production force that they are having on GenRad's customers. There is a reduced need for the traditional job of "test technician," because most testing has become integral to production. Cambria says, "It used to be that the assemblers would assemble, and the inspectors would occasionally throw the work back at them. With the quality control built right into the manufacturing process, we've been able to get rid of an entire layer of inspectors."

In principle, the proliferation of computers will require skilled repair people to maintain them. The Bureau of Labor Statistics projects about 130,000 new repair jobs for all types of office machinery over the course of this decade. But according to Michael Odom, a human-resources executive with Digital Equipment Corporation, the nation's second-largest computer maker, computer repair is likely to be a field of short-lived growth. Many of the new minicomputers on the market are self-diagnosing. If a circuit malfunctions, the screen will literally tell the user which panel to pull out. The circuit boards slide out like trays in a baker's rack. Digital gives its customers a supply of yellow mailing envelopes, with instructions to send the defective board back to the company for a replacement.

"Things that break are usually things that move," Odom says. "The circuit board is being condensed into a chip. You don't repair a chip. The old personal computers had 100 chips; the new ones have nine. Pretty soon, computers will have no moving parts other than an on-off button. When the whole operation is on a few chips, the greatest likelihood of malfunction is probably random failure caused

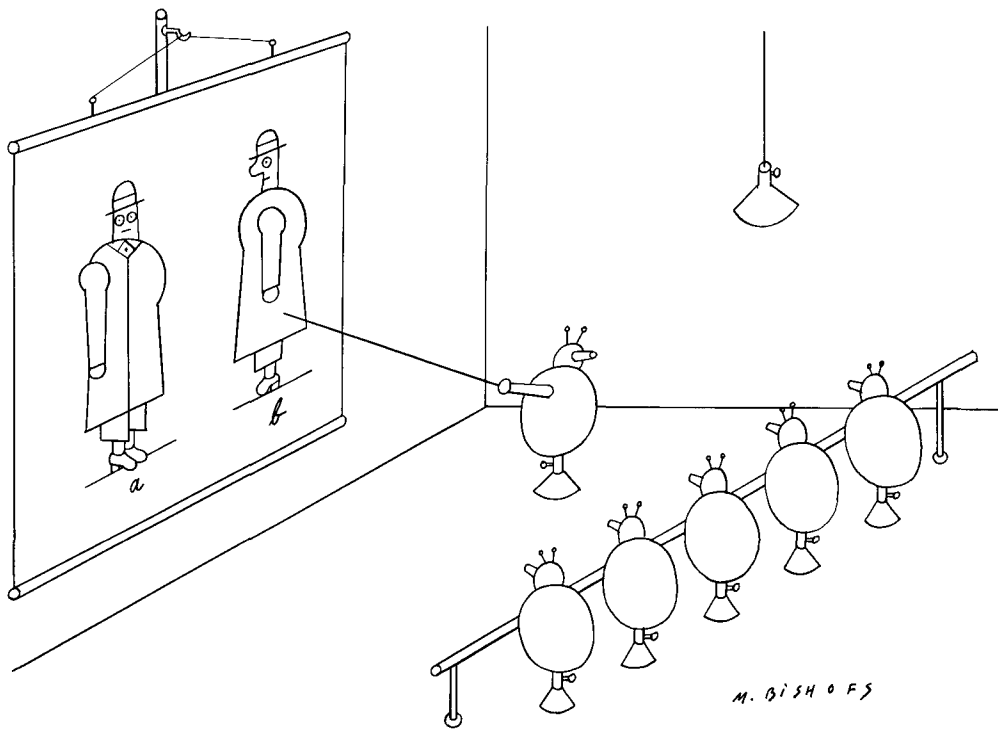
when a circuit is struck by an extraterrestrial gamma ray.

"When the systems were more complex, we needed more sophisticated technicians to maintain them," Odom adds. "As the computer becomes a mass-market commodity—like a stereo—sales, distribution, and repair are all becoming routinized and simplified."

Odom believes passionately in educating people to work with computers. He is currently on loan from Digital to the Boston city school system to help develop a computer curriculum. But he scoffs at those who expect high technology to fill the gaps in the middle of the labor market. "It's just wrong to hold out hope for high-tech as a mass provider of jobs," he says. "Increasingly, it's an elite industry of professionals. The job growth is in the industries that use

regarded as a hot new opportunity, will diminish, because the engineer himself will sit at the computer terminal and transform his specifications directly into a product.

The economy, of course, will still require technicians to perform traditional jobs. During the 1980s, about 200,000 more auto mechanics will be needed. But contrary to expectations of a smaller but more highly skilled blue-collar work force serving high technology, there is little evidence on the shop floors or in federal statistics of a boom in demand for skilled technicians. The Bureau of Labor Statistics projects that by 1990 about 1.5 million new technical jobs will be created, accounting for 8 percent of the total job growth. But these "new technical jobs" include dental hygienists and surveyors as well as electronics technicians.



our technology, and I worry about what kind of jobs those will be and who will get them."

Within manufacturing generally, automation will affect the middle of the labor market in ways that are not always easy to predict. One important innovation just beginning to be applied is "computer aided design/computer aided manufacturing," or CAD/CAM. Using a computer to make and modify designs, based on an engineer's specifications, increases the productivity of a draftsman many times. The same computer that produces the blueprint can instruct the machinery to build the part. A number of junior colleges have introduced CAD/CAM programs to retrain and upgrade a whole generation of draftsmen. But, according to Lon Bonczek, a corporate vice president of Computervision, a leading CAD/CAM manufacturer, just over the horizon is something called CIM, or "computer-integrated manufacturing." The job of CAD/CAM technician, which is

IF THE CHANGING SHAPE OF THE NATION'S ECONOMY indeed signals a change for the worse in the distribution of jobs, there has been surprisingly little fruitful discussion of what is to be done. Public-policy debate focuses primarily on the gross unemployment rate, and on the need for government to create jobs or to subsidize job training. The quality of work, aside from industrial health-and-safety hazards, and the distribution of job opportunities are not visible public issues.

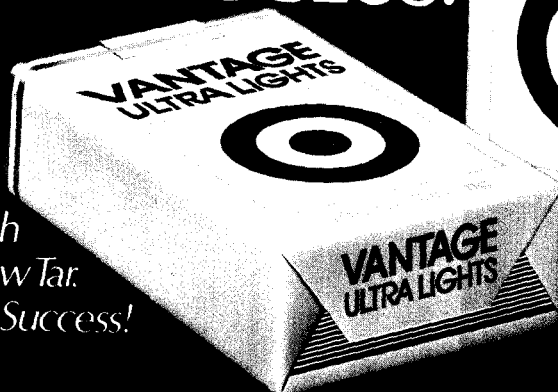
Some economists believe that demographic shifts are responsible for the polarization of the work force, and that demographic shifts will eventually restore equilibrium. In this view, the explanation for both the depression of average wages and the widening gap between high and low wages is the disproportionate number of young people and of women who entered the work force during the 1970s. Young workers characteristically earn less than older

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ones, because of their inexperience, and women earn less than men, because of discrimination, and because of the poor salary histories that past discrimination has engendered. So it is often argued that as the work force ages and discrimination recedes, wages will fall closer to the center. Also, some economists say that as the baby-boom generation is absorbed into the work force, labor supply and demand will again balance out and employers will have to pay more to attract workers.

The trouble with this theory is that it fails to acknowledge the changing range of occupations, as well as the opportunity to rise within them. The demand for workers is increasingly skewed to the extremes as a result of technology—a pressure independent of supply. And as the youthful work force ages and more women seek to rise from clerical status, the competition will become even more intense for the scarce good jobs. Demographic shifts are likely to aggravate the competition for at least a generation. In 1975, about 16.7 million workers were between thirty-five and forty-five years old—the prime earning period. In 1995, almost 34 million people will fall into this age group. Twice as many middle-aged people will be competing in 1995 for the limited supply of breadwinning jobs. A recent study by the economists Martin Dooley and Peter Gottschalk, who teach at McMaster University and Bowdoin College, respectively, considered whether or not demographics alone could account for the inequality in wages during the 1970s. Even after correcting for the age, sex, size, and education of the work force, Dooley and Gottschalk found that wages remained unaccountably skewed.

Others argue that as the productivity of the economy continues to rise, wages must logically rise as well. Isabel

Sawhill, the former director of the National Commission for Employment Policy, says, “In the long run, the cure for low wages is increasing productivity.”

This cure does not treat the distributional malady, however. It is entirely possible for the economy as a whole to grow more productive while wages and occupations continue to concentrate at the extremes. At the GenRad Corporation, company revenues per worker rose from \$59,000 in 1981 to \$72,000 in 1982 to an estimated \$83,000 in 1983. Nevertheless, the wages of assembly workers have not grown nearly that fast, and the company is having no trouble filling those jobs.

The fragmentation of the economy into dissimilar realms has been debated for years by economists. John Stuart Mill, in his work *Principles of Political Economy*, published in 1848, noted the fact that a common laborer could not reasonably aspire to be an artisan, and analyzed the barriers to free competition among workers for available jobs. Several generations of American students of trade unionism, beginning with the institutional economist John R. Commons in the 1920s, have pursued this line of inquiry. In the early 1970s, the labor economists Peter Doeringer and Michael Piore began to write about dual labor markets. The “primary” labor market, they found, is typically union-organized or professional, with relatively good wages and benefits, fairly predictable careers, and job security. The “secondary” labor market, in contrast, is made up of less desirable, low-wage jobs. Its defining characteristic is instability, with high turnover and a large proportion of part-time or seasonal work. Piore, Doeringer, and other labor-market theorists also point out the predominance of white males in “primary” jobs, and argue that the dual system both reflects and reinforces discrimination. A surprisingly large number of primary jobs, they note, do not have high formal entry requirements; skills are learned instead on the job. Through informal referral networks, white men are steered into the better jobs while blacks and women end up with the inferior ones.

Economists of the rival “human-capital” school have responded to dual-labor-market theorists by arguing that if such a schism exists at all, it reflects mainly differences of skill and education. They say that undoubtedly some racial and sexual discrimination persists, and is to be deplored, but if workers are only marginally literate, with little training and sloppy work habits, it is hardly surprising that they should find only marginal jobs. Indeed, they say, it is fortunate that society provides jobs for such workers at all. According to the human-capital theorists, the obvious way to upgrade jobs is to upgrade the qualifications of the work force. This approach has informed most federal job-training efforts, including the Manpower Development and Training Act of 1962, CETA, and, more recently, President Reagan’s retraining initiative.

A favorite counter-example by the dual-labor school is the mobilization of factories during World War II. All kinds of people who had never seen the inside of a plant learned a



THE DIFFICULT MARRIAGE

The bride disappears. After twenty minutes of searching we discover her in the cellar, vanishing against a pillar in her white gown and her skin’s original pallor.

When we guide her back to the altar, we find the groom in his slouch hat, open shirt, and untended beard withdrawn to the belltower with the healthy young sexton from whose comradeship we detach him with difficulty. Oh, never in all the cathedrals and academies of compulsory Democracy and free-thinking Calvinism will these poets marry! — O pale, passionate anchoress of Amherst! O reticent kosmos of Brooklyn!

—Donald Hall

variety of skills on the job. But jobs were available then. If the demand for workers today is increasingly shifting toward professional jobs at one extreme, and low-wage, routine jobs at the other, it is no solution to upgrade the qualifications of workers. Although nobody should oppose the improvement of basic education for its own sake, education will have little impact on the kinds of jobs available.

Ronald Kutscher, of the Bureau of Labor Statistics, reports that true shortages of qualified workers exist only in a few engineering specialties, and in the highest-skilled blue-collar occupations, such as journeyman tool-and-die maker. Since the real problem is the supply of good jobs rather than the supply of good workers, an emphasis on education and training will make the work force even more frustrated than it is now. According to Isabel Sawhill, during the 1970s one college graduate in five was forced to take a job that did not require a college degree.

IF RETRAINING AND BETTER BASIC EDUCATION ARE not by themselves solutions to the polarization of the supply of jobs, society is not entirely without remedies. It can intervene in several ways to influence the mix of jobs, to maximize career possibilities within the workplace, and, if nothing else, to assure that routine jobs at least pay decently. Most such measures, however, are either unpopular or relatively untested.

The simplest way to promote relatively equal wage scales is to encourage trade unionism. According to James Medoff, a professor of economics at Harvard who specializes in labor markets, unionism by itself tends to increase wages by between 10 and 20 percent. In retail trade, for example, workers in unionized stores earn an average of \$179 a week, according to the Bureau of Labor Statistics. Non-union retail workers earn only \$111 a week. Unionism is a force for wage equality for several distinct reasons. First, unions understandably seek to organize workers from the bottom up, both for reasons of solidarity and to ensure that workers whose wages are low do not underbid union members. Second, unions tend to negotiate standard wage rates across firms and regions. Unions are also the principal lobby for a minimum wage, which tends to improve the distribution of wages generally. It is interesting to note that the minimum wage, which was once 54 percent of the average wage, has fallen to a record low of 39 percent—another reflection of widening inequality, and of the declining power of unions.

When unions represent most workers, they undoubtedly improve the overall distribution of wages. When they represent only about one worker in five—as in the United States today, where union membership is at a forty-seven-year low—they tend to reinforce the trend toward a dual labor market, because their members enjoy a degree of market power to bargain for cost-of-living and productivity adjustments that other workers lack. In countries with strong unions, the labor movement acts as a prime force for

what is sometimes called a solidarity wage policy—the deliberate narrowing of the range in wage and salary income. In Sweden, where both the trade-union federation and the Social Democratic Party have recognized the limits of taxation and income transfer as instruments of redistribution, wage equalization is seen as a more efficient version of the welfare state. If wages are more nearly equal to begin with, there is less need for social programs and high taxes.

Unions can be a force for egalitarian labor markets insofar as they are the principal constituency for clear career ladders, apprenticeship programs, and on-the-job retraining. Although some unions, notably those for the building trades, have acted to restrict opportunities for apprenticeship, others have sought to expand them. In the tool-and-die industry, for example, where it takes as long as four years to train a skilled journeyman, many small shops are reluctant to invest that much effort in a worker who is free to leave for a better-paid job. The International Association of Machinists has long lobbied—unsuccessfully—for publicly subsidized apprenticeship training. The United Auto Workers recently bargained for a joint program with Ford, which allows both active and laid-off workers to train for new jobs, partly at company expense. In health care, which is fragmenting into a number of paraprofessional specialties, the Service Employees International Union has fought a rearguard action to allow orderlies and practical nurses to train on the job for better positions, rather than letting hospitals recruit all their technicians from technical schools and their registered nurses from four-year colleges.

Unions can also influence the way technology is applied. Officials of the United Food and Commercial Workers (UFCW) report that the new optical scanners are popular among unionized check-out clerks. A clerk has more time to chat with customers, while the scanner rings up the groceries. The scanners obviously help management improve inventory control. In bargaining over the introduction of the new technology, however, the union made sure that it would not be used to tie wages or promotions to output. This contrasts sharply with the policy of Massachusetts Blue Cross Blue Shield, whose claims examiners are not represented by a union and whose automated equipment accomplishes precisely what the UFCW sought to avoid.

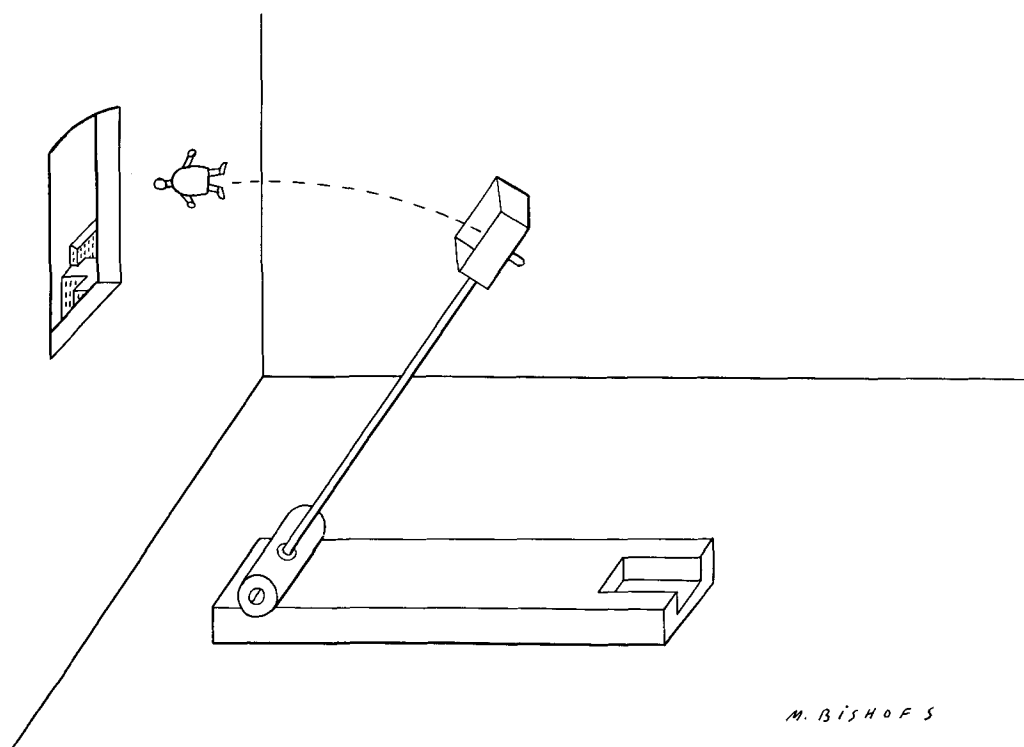
Although American unions are in decline, and therefore lack a pervasive influence on how management makes use of technology, management's own interests are sometimes served by the upgrading of jobs as a result of technology. While many Marxist economists, notably the late Harry Braverman, have contended that the "de-skilling" of the labor force is an inevitable consequence of advanced capitalism, the contrast between the status of the Blue Cross Blue Shield claims clerks and that of First National Bank's letter-of-credit clerks suggests that management has some latitude in the way it applies technology to the tasks at hand. William Spring, a White House adviser to President Jimmy Carter on employment policy, believes that few

managers pay close attention to internal labor markets. While most corporations are nominally committed to a policy of promotion from within, maintaining a broad middle sector of the work force is rarely a corporate goal for its own sake. And the wish to cut short-run costs seems to encourage just the sort of de-skilling that the Marxists denounce.

THE OTHER UNFASHIONABLE REMEDY FOR THE polarization of work is the public sector itself. Tom Wolfe, in his essay "Mau-Mauing the Flak-Catchers," which described an anti-poverty office in San Francisco, noted a truth about public-service agencies that poor

ers and social workers. The choice exists within a realm of public policy that is the least charted of all: the means for redistributing the fruits of productivity and automation.

Harry Bridges, who was the president of the International Longshoremen's and Warehousemen's Union from 1937 to 1977, was among the first labor leaders to bargain explicitly with management on the consequences of automation. Beginning in 1960, as the West Coast docks were automated, Bridges negotiated the following arrangement: The shipping companies would be free to automate, but his members would not be laid off. The wages of longshoremen holding "A" union cards would rise with productivity, and the number of longshoremen would gradually be reduced by attrition. Bridges liked to say, "At this rate, by



M. BISHOP'S

people themselves had perceived immediately. The real value of the war on poverty lay not in the programs offered *by* the poverty agencies but in the opportunity of holding jobs *in* the poverty agencies. The public sector has been the main avenue of upward mobility for blacks and women. In 1970, according to the economist Martin Carnoy, of Stanford University, 57 percent of all black male college graduates, 79 percent of all black female college graduates, and 62 percent of all white female college graduates held public-sector jobs.

As more and more of society's material goods are produced by fewer and fewer workers, the kind of society that results is ultimately a political choice. We can permit the owners of wealth to spend most of their earnings privately—and the service jobs will include salesclerks, waiters, and open-heart surgeons—or we can tax away some of those earnings and let the service jobs include more teach-

the year 2000 there will be one longshoreman left on the docks. But he's going to be the best-paid son of a bitch in the United States." As Bridges recognized, the deal was fine for union members holding "A" cards, but not so good for the work force as a whole. To generalize from Bridges's quip to an only slightly more absurd extreme, what would happen if all physical goods were produced by robots? The one worker who flipped the switch would boast astronomically high productivity. What should he be paid? And what would everyone else do for a living?

Twenty years ago, many futurists predicted that society would soon become so productive that the main problem would be what to do with leisure time. It hasn't quite worked out that way. The productivity of manufacturing is rising, but since 1973, average household income, adjusted for inflation, has declined about 11 percent, and average wages have dropped 16 percent. In more than 50 percent

of families with children, both parents work. Almost half of all mothers of children under six years of age work. Far from the ideal of part-time jobs, shared child-rearing, and increased leisure, most parents in two-income families are instead working full-time, juggling baby-sitters, and wondering why they have no time even to watch television.

Among the various possible remedies, the Luddite answer is surely the wrong one. It makes no sense to preserve manual jobs doing hot, dirty work, when machines could liberate workers to do something else. But, still, the question is what? Other countries, notably in Western Europe, have made an effort to redistribute productivity by lowering the retirement age, shortening the work week, increasing vacation time, and promoting part-time work. Although none of these experiments has yet had impressive results—the European economy continues to generate more products with fewer workers, and to create more low- than high-wage jobs—the obstacles to a radical redistribution of technology's benefits seem to be as much political as they are economic.

The industrial West as a whole is coming under heavy pressure, both from technology and from trade, to lower its wages. If machines are available to replace most human production jobs, and if unemployed women in the Orient are eager to take the remaining jobs producing for Western markets at ninety cents an hour, then the postwar social contract that developed in Western Europe and North America is in severe jeopardy. That social contract included high wages, job security, and a costly welfare state. It enabled the West to defy Karl Marx's prediction that under capitalism the labor force could only become worse off. Now, paradoxically, one hears that in order to maintain our standard of living we must first lower it: to remain competitive, the West must jettison the very social baggage that has assured a comfortable passage. This conclusion somehow defies common sense. From the viewpoint of the entrepreneur, wages are an unfortunate cost of production. From the perspective of the entire economy, however, they are the stuff of social stability.

A distinguished company of essentially conservative political economists—Charles E. Lindblom, Karl Polanyi, Joseph Schumpeter, and even Adam Smith—have recognized what Lindblom was eventually to call "the limited competence of markets." Free markets are superb at energizing human creativity and innovation. They incur painful costs of transition, however, which are often imposed unfairly. Through no fault of their own, textile workers in North Carolina bear the costs of a new technology invented in Tokyo. The market is a marvelous engine of growth, but it is not very good at providing a socially defensible distribution of income. Over the course of this century,

governments big and small have intervened to smooth out business cycles and distribute income more equitably; in this country, the devices have included minimum-wage laws, legal recognition of trade unions, Social Security, and a progressive income tax, among others. Perhaps we should add to the list of things that the market does imperfectly the distribution of work opportunity, and find ways to intervene here, as well.

Wassily Leontief, the Nobel laureate in economics, argues that the loss of purchasing power from the decline in wages brought about by automation could doom the economy to a paradoxical state of rising productivity and rising destitution. Leontief proposes an ever-shorter work week, in order to assure a fair distribution of jobs and leisure, and a greater reliance on government transfer payments to distribute income and maintain consumer purchasing power. Although millions of workers are unemployed, millions more are working longer at their jobs than they might wish: the two obvious categories are people near retirement age and working parents. Following Leontief's approach, the government might supplement the pay of workers who voluntarily cut back to a three-day work week at the age of sixty. It could also supplement the income of working parents so that they could work half-time for, say, five years at a full-time rate of pay. Millions of new jobs would thereby be opened up, and at the same time, those who chose to work fewer hours for a while would suffer no loss of purchasing power. This system would be expensive in tax dollars over the short run, but as the unemployment rate dropped, it would also generate economic growth, and hence more tax revenue. Unions could then welcome automation without fear that society as a whole would benefit at the expense of the livelihood of production workers.

Automation may be the ultimate solution to the inroads of foreign competition on American markets, and to the loss of American plants to poorer countries. As more efficient machines replace human workers, smarter capital equipment matters more than cheaper labor. But for automation truly to serve as a remedy of this country's economic ailments, society must become far more explicit about how the benefits of automation are distributed. Leontief's idea—automation combined with redistribution—would require an even greater role for trade unions and for the state than they now play. Although the government as the redistributor of income and trade unions as the defenders of wages have been declared all but extinct lately, they may be the best instruments we have to resolve an explosive dilemma. The debate about the distribution of wages and the content of work has scarcely started, but it is certain to become more urgent. □



FIRST ENCOUNTERS

ROBERT LOUIS STEVENSON AND HENRY ADAMS

It was never easy being an Adams. For Henry Adams it was burdensome—in Quincy, in Boston, in the elegant custom-built Washington house—and, finally, in Samoa.

In 1890, Adams, accompanied by the American artist John La Farge, set out on a South Seas junket that was half adventure, half escape. He had just completed his nine-volume history of the Jefferson and Madison administrations, and felt in need of a complete break. Samoa offered that; still, Adams had scarcely disembarked before he was seeking out the island's famous writer-in-residence—Robert Louis Stevenson.

That November, Stevenson and his American wife, Fanny, were just settling in at Vailima, a wild, almost inaccessible estate chosen for the salubrious effect of its altitude on Stevenson's advanced tuberculosis. Adams and La Farge plodded upward on horseback to come out upon a temporary iron-roofed shanty surrounded by the charred stumps of trees. From it emerged their surprised host, nearly a foot taller than Adams, thin to emaciation. The

scene was *Treasure Island* incarnate. Stevenson wore striped pajamas tucked into coarse-knit stockings, one brown, one purple. His face was streaked with soot.

But it was Adams, not Stevenson, who was embarrassed. To Adams, who was always correctly dressed, who had not moved into his house until the last rug was placed and picture hung, celebrity implied obligation. An Adams understood obligation. Stevenson seemed preoccupied with other matters. Besides, there was the distressing fact that although Stevenson had recognized La Farge, he had obviously not a clue who Adams was.

The Americans were on Samoa for some weeks. Adams enjoyed Stevenson's company, but conversation inclined to wild tales of native practices, with little occasion for his own wry witticisms. Adams envied the fame of which Stevenson, twelve years his junior, was so careless. He felt himself a "straggler." Because his *Education* was not published until after his death, he never knew how magnificently he caught up.

—Nancy Caldwell Sorel

HORACE AND MARGARET'S FIFTY-SECOND

A SHORT STORY
BY CHARLES BAXTER



A FEW MONTHS AFTER SHE HAD PUT HER HUSBAND, all memory gone, into the home, she herself woke one morning with an unfamiliar sun shining through a window she hadn't remembered was there. A new window! Pranksters were playing a shabby joke on her. Margaret rose heavily from the bed, a groan bursting by accident out of her throat, and shuffled to the new window they had installed during the night. Through the dusty glass she saw the apartment building's ragged back yard of cement and weeds. A puddle had formed in the alley, and a brown bird was flapping in it, making muddy waves as it bathed. Then she looked more closely and saw that the bird was lying on its side.

"I remember this view," she said aloud. "It's not a new window. I just forgot to pull down the shade." She did so now, blocking the sun, which seemed to her more grayish-blue than it had for years. She coughed rhythmically with every other step to the bathroom.

It was Tuesday, and their anniversary. He would forget, as usual. Now, in his vacancy, he had stopped using shaving cream and razor blades. He tore photographs out of

their expensive frames, folded them into baskets, and used them as ashtrays. He took cigarette lighters to pieces to see how they worked and left their tiny wet parts scattered all over his nightstand. He refused to read, claiming that what she brought him was dull trash, but she had suspected for a long time that he had forgotten both the meaning of the words and how to read them from left to right across the page. She didn't want to buy him cigarettes (in his dotage, he had secretly and then quite openly taken up smoking Chesterfields again). He lost clothes or put them on backward or declared universal birthdays so he could give everything he owned to strangers. The previous Wednesday, she had asked him what he would want for their upcoming anniversary, their fifty-second. "Light bulbs," he said, giving her an unpleasantly sly look.

She glanced at his lamp and saw that the shade was pleated oddly. "They give you plenty of bulbs here," she said. "Ask them."

He shook his head for thirty seconds before he replied. "Wrong bulbs," he said. "It's the special ones I need, with the flames."

"Light bulbs don't have flames," she said. "It's filaments now."

"Don't argue with me. I know what I want. Light bulbs."

Charles Baxter teaches at Wayne State University. His short story "Harmony of the World" appeared in Best American Short Stories, 1982, edited by John Gardner.

ILLUSTRATION BY WENDELL MINOR

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She was at the breakfast table reading the paper when she remembered that she had dropped an egg into the frypan, where, even at this moment, it must still be frying: hard, angry, and dry. She forgave herself, because she had been thinking about how to get to the First Christian Residence before lunch, and which purple bus she should take. She walked to the little four-burner stove with its cracked oven window, closed her eyes against the smoke, picked up the frypan using a worn potholder with a picture of a cow on it, and dropped her last egg into the wastebasket's brown paper bag. Now she had nothing to eat but toast. She was trying to remember what she had done with the bread when she heard the phone ring and she saw from the kitchen clock that it was 10:30, two hours later than she had thought.

She picked the receiver angrily off the wall. "Yes," she said. She no longer said "Hello"; she was tired of that.

"Hello?"

"Yes," she said. "Yes, yes, yes, who is it?"

"It's me," the voice said. "Happy anniversary."

Very familiar, this woman's voice. "Thank you," Margaret said. "It's our fifty-second."

"I know," the voice told her. "I just wish I could be there."

"So do I," Margaret said, a thin electrical charge of panic spreading over her. "I wish you could be here to keep me company. How are you?"

"Just fine. Jerry's out of town, but of course David's with me, and last night we roasted marshmallows and made a big bowl of popcorn."

David. Oh, yes: her grandchild. This must be David's mother. "Penny," she said.

"What?"

"I just wanted to say your name."

"Why?"

"Because," Margaret said carelessly, "because I just thought of it."

"Mother, are you all right?"

"Just fine, dear. I'm going to take the bus to see your father in half an hour's time. I'm going to wish him a happy anniversary. I doubt he'll notice. He won't remember it's our anniversary, I don't think. Maybe he won't remember me. You can never tell." She laughed. "As he says, the moving men just come and take it all away. You can't tell about anything. For example, I thought they put a new window in my room last night, but I'd only forgotten to pull down the window shade." She noticed a list on the refrigerator, a list of things she must do today. It was getting late. "Good-bye, Penny," she said, before hanging up. She picked the list off the refrigerator and put it in her pocket. Then she stood in the middle of the room, her mind whirling and utterly blank, while she stared at the faucet on the right-hand side of the sink and, above it, attached to the cabinet, a faded color photograph of a brown-haired girl, looking away from the camera toward a tree. It was probably Penny, when young.

ONCE MARGARET WAS ON THE BUS, SHE WAS SURE that everything would be fine. The sun was out and several children were playing their peculiar games on the sidewalk, smacking each other and rolling over to play dead. Why weren't they in school? She knew better than to ask children to explain their reasons for being in any one spot. If you asked such questions, they always had that look ready.

The bus was practically empty. All the passengers, thank God, seemed to be respectable taxpayers: a gentleman with several strands of attractive gray hair sat two rows in front of her, comforting her with his presence. The sun, now yellow, was shining fiercely on Margaret's side of the bus, its ferocity tempered by tinted glass.

Margaret felt the sun on her face and said, "Sweet sweet sweet sweet tea." This, her one and only phrase to express joy, she had picked up in 1935, from a newspaper article that had tried to make fun of Gertrude Stein. The article had quoted one of her poems, and Margaret had remembered its first line ever since. "Sweet sweet sweet sweet tea," she said again, gazing out the window at obscurely sinister trees, with far too many leaves, all of them the wrong shape.

Horace, before he had been deposited in the First Christian Residence, had been a great one for trees: after they had bought a house, he had planted them in the back yard, trimmed them, fed them, watered them when droughts dusted their leaves. "Trees," he liked to say, "give back more than they take. Fruit, oxygen, and shade. And for this they expect no gratitude." He would have been happy working in a nursery or a greenhouse. As it was, he worked in a bank, and never talked about exactly what he did there. "It's boring," he would say. "You don't want to hear about it." Margaret agreed; she didn't. Only toward the end had he raged about the nature of his work. But he didn't shout at Margaret; he told the trees. He told them how money had gobbled up his life. He talked about waste and cash, and he wept into his hands. Margaret watched him from the kitchen window. She watched him as he lost his memory and began to give names to the trees: Esther, Jonas, Ezekiel, Isaiah. He told Margaret that trees should have serious, adult names. For eighteen months now, he had confused the names of his trees with the names of his children. He wanted his trees to come visit him in the home. "Bring in Esther," he would say. "I want to see her."

Because of this, Margaret no longer gazed at trunks, branches, or leaves with any special pleasure.

She remembered where to get off the bus and was about to go into the residence when she realized that she had no anniversary present. She stood motionless on the sidewalk. "He won't remember," she said aloud. "What's the difference?" She waited a moment and found that she disagreed with her own assessment. "It does make a difference. He'll think I'm making it up if I don't bring him

something." She looked around. At the corner there was a small grocery store with a large red Coca-Cola sign over its door. "I'll go down there," she said.

The store was darker than it should have been and was crowded with confusing teenagers. Margaret found herself looking at peanut-butter labels and long rows of lunch meat. Then she was in front of the cash register, holding two Hershey bars. "I'll buy these," she said to the coarse girl with the brown ponytail and the pimples. She was already far down the street when she realized that she hadn't waited for change, or a bag to put the chocolate in. It was the first time she had given him a present she hadn't wrapped.

Holding the candy bars and her purse in one hand, she opened the large front door of the First Christian Residence with the other. This was the worst moment, because of the smell. Margaret knew that oldsters couldn't always keep themselves clean and tidy, but their smell offended her nevertheless. Just inside, a man with wild hair and a bruise on his forehead, whose eyes were an angelic blue, smiled at her and followed her in his wheelchair as she walked to the elevator. A yellow Have-a-nice-day sticker, with a smile face, was glued to the back of the chair.

"Beautiful day, Margaret. Don't you agree?"

"Yes." This man had been pestering her for months. He was forward, and looked at her with an old man's dry yearning. "Yes," she repeated, inside the elevator, as she pressed the button for the third floor, wanting the door to close, "it is indeed a nice day. You should get outside into the sunshine for some fresh air and vitamin D, instead of staying in here all the time."

He wheeled himself onto the elevator and turned around so he was next to her. "I stayed," he said, "because I was hoping you'd come." The elevator doors closed, at last. "I can still walk, you know. This chair is a convenience."

Margaret tried to sound chilly. "I'm going to see Horace, my husband. I don't have time for you."

"Horace won't miss you. His memory's bad. He remembers the 1945 World Series better than he remembers you. Let's go for a walk."

"No, thank you." She remembered his name. "No, thank you, Mr. Bartlett."

"It's Jim. Not 'Mr. Bartlett.' Jim." He smiled. She noticed again his remarkable eyes. The numbers above the doors flashed. It was the slowest elevator she'd ever been on, slow to prevent shocks to the elderly.

"This is my stop," she said, backing out into the hallway, once the doors opened. As they closed again, Mr. Bartlett leaned back in his wheelchair and gave her a bold look.

Horace was in his room, wearing a Wayne State University sweatshirt, gray corduroys, and tennis shoes. He was watching *The Price Is Right* and eagerly smoking a Chesterfield when Margaret came in. He glanced at her and then went back to the activity of the contestants. On

screen, a woman in uniform was spinning a huge, multi-colored wheel, and the studio audience was roaring, but Horace failed to share the excitement and watched the television set indifferently. Margaret picked up a newspaper from the chair by the window and arranged the flower-pots on the sill.

"Good morning, dear," she said. "How did you sleep?"

Horace didn't answer. Perhaps it would be one of those days. Lately he had retreated into silence. Apparently he found it comforting. Margaret clucked, shook her head, and walked over to the television set, which she turned off.

"It's our anniversary," she said. "I don't want daytime television on our anniversary."

On the table next to Horace was a breakfast roll. A fly walked back and forth on it, as if on sentry duty. Margaret picked up the plate and took it out to the hallway, placing it on the floor next to the wall. When she came back, Horace was still staring at the dark television screen.

She gazed at him for a moment. Then she said brightly, "Do you remember Mrs. Silverman, two floors up in the building, Horace? The apartment building? Where we moved after we sold the house? Mrs. Silverman, whose husband was so terribly bald? I'm sure you do. Well, anyway, several nights ago there was a great commotion, and it seemed that Mrs. Silverman was reading the paper, probably just the want ads, as she did usually, when she had one of those seizures of hers. She knocked over a tall glass of ginger ale. It left a stain on the rug, I think. They came for her and took her to the hospital, but the word in the building is that it may be curtains for Mrs. Silverman."

"The moving men," Horace rasped.

"Yes, Horace, the moving men. Someone in the building called for them. Sometimes they can help and other times they can't. You are looking very scruffy today, Horace," she said. "Where did you get that awful sweatshirt?"

"Someone gave it to me," he said, avoiding eye contact.

"Who?" she asked. "Not that horrid little Mr. List?"

"Maybe." Horace shrugged.

"I'd think you'd be ashamed to be in that sweatshirt. You were never a student at Wayne State. Never. You went to Oberlin."

"It's warm," Horace said. "And it's green."

"Which reminds me," Margaret announced, "that I thought they had put a new window into our bedroom last night. But I just forgot to pull down the shade. Oh. Someone called this morning." She thought for a moment. "Penny." She waited for him to show recognition, but he kept his face turned away from hers. "She called to wish us a happy anniversary. It's our anniversary today, Horace."

"I know that," he said. "I know that very well."

"Well, I'm glad. I brought you something."

"Light bulbs?"

"No. Not light bulbs. I explained to you about the light bulbs. You don't need them. What do you need them for?"

"Bliss," Horace said.

"For bliss? I doubt it. No. Well, what I brought you was this." She handed him the Hershey bars. "Happy anniversary, dear. These were the best I could do. I am sorry. Age has brought us low. I would have presented you with a plant in the old days."

"These *are* the old days," Horace said. He gazed down at the dark-brown wrappers. "Thank you. Mr. List likes chocolate. So do I, but Mr. List likes chocolate more than I do." Horace suddenly looked at her, and she flinched. "How's Penny? And where's Isaiah?"

"Penny's fine. She toasted marshmallows with David last night. And Isaiah's lost his leaves, because it's late October."

Horace nodded. He appeared to think for a long time. Then he said, "I went out yesterday. I wanted to drop something on the ground the way the trees do. Dead leaves reactivate the soil, you know. They don't rake leaves in the forest, only in the suburbs. It's against nature and foolhardy to rake leaves. I pulled out a strand of my hair and left it in the grass. Why did we get married in October? Tell me again." He smirked at her. "I've forgotten. I've lost my memory."

"It was 1930, Horace. Times were hard. When you final-

ly secured a job at the Farmers and Mechanics' Bank, I agreed to marry you."

"Yes."

Margaret knew she had made a serious mistake as soon as she saw the tears: she had mentioned the bank.

"When did you stop kissing me?" Horace asked.

"What?"

"After the war. You wouldn't kiss me after the war. Why not?"

"I think this is very unpleasant, Horace. I don't know what you're talking about."

"Of course you do. You wouldn't kiss me after the war. Why?"

"You know very well," she said.

"Tell me again," Horace said. "I've lost my memory."

"I didn't like it," she muttered, standing up to look out of the window.

"What didn't you like?"

"I didn't like the way you kissed me."

"We weren't old yet," Horace said. "It's what adults do. They have passions. You can't fool me about that."

Margaret felt tired and hungry. She wished she hadn't taken the breakfast roll out to the hallway.

"I'm not here to settle old scores," she said. "Do you want to split one of these candy bars?" Outside, a blue convertible with a white-canvas roof came to a stop at an intersection and seemed unable to move, and all around it the small pedestrians froze into timeless attitudes, and the sun blinked on and off, as if a boy were flipping a wall switch.

Horace struck a kitchen match on the zipper of his pants and lit up a cigarette. "I love cigarettes," he said. "I get ideas from the smoke. Call me crazy if you want to, but yesterday I was thinking about how few decisions in my life were truly important. I didn't decide about the war and I didn't decide to drop the bomb. They didn't ask me about nuclear generators, or, for that matter, about coal generators. I had opinions. They could have asked me. But they didn't. Mr. List and I were discussing this yesterday. The only thing they ever asked us was what we were going to do on the weekends. That's all. 'What are you doing Saturday night?' That's the only question I can remember."

Margaret tore the brown paper away from the candy bar, then crumpled up the inner wrapper before she snapped off four little squares of the chocolate. Someone seemed to be flicking lights inside the First Christian Residence as well. The taste of the chocolate rushed across her tongue, straight from heaven.

"Want any rum?" Horace asked. "I have some in the closet. Mr. List brought it for me. On days like this, I take to the rum with a fierce joy." This line sounded like, and was, one of his favorites.

"Horace, you can't have liquor in here! You'll be expelled!"

Suddenly he appeared not to hear her. His face lost its



IBIS

The drought persisted. Mornings he would stand
Among the hogs on one leg, balancing
Half sunk in that rich filth he had to probe,
To peck at curd, extending his thin neck

As if for slaughter: Bird, who having not
Invented justice, charged no violation,
Claimed no dignity his need could shame—
Just bird alone, who came at dawn, cried out

And went on feeding. By late afternoon
The offal in his feathers dried. He preened,
Puffed his warm breast wide, then circled off
Across the cow kraal, raising a harsh cry

From dung to heaven. Sought no witness, made
A job of drift between baked laterite
And fertile sty; flew fast, as if his wings
Could scrape the bright rust from an arid sky.

—Harvey Oxenhorn

color, and she could tell he would probably not say another word for the rest of the morning. She took the opportunity to snap off one more piece of the chocolate and to straighten the room, to put smelly ashtrays, pens, shirts, and dulled pencils in their rightful place. There were pencil sketches of trees, which she stacked into a neat pile. In this mess she noticed a photograph of the two of them together, young, sitting under a large chandelier, smiling fixedly. Where was that? Margaret couldn't remember. Another photo showed Natwick, Horace's dog in the 1950s, under a tree, his mouth open and his dirty retriever's teeth prominent. Horace had trained him to smile on cue.

"Someday, Horace," Margaret said, "you'll remember to keep your valuables and to throw away the trash. You've got the whole thing backward." Seeing that he said nothing, she went on. "So often I myself have . . . so often I, too, have found that I have been myself in a place where I have found myself so often in a place where I have found myself." Standing there, squarely in the middle of the room, she felt herself tipping toward Horace's cigarette smoke, falling through it, tumbling as if off a building, end over end, floor after floor. Horace held his hand up. Margaret, whose mind was still plunging, walked toward him. He whirled his hand counterclockwise as an invitation to bring her ear down to his mouth.

"Don't tell me anything," he whispered. "That's for kids. And be quiet. Listen. There's a bird scratching in the tree outside. Hear it?"

She did not. Margaret bent down to kiss his forehead and made her way out of the room, sick with vertigo. The hallway stretched and shrank while she balanced herself like a tightrope walker in a forward progress to the elevator. Three floors down, Mr. Bartlett was waiting for her, wearing a cap and a jacket in his wheelchair, but she tottered past him, out into the sun, which she saw had turned a sickly blue.

THERE WAS SOMETHING WRONG WITH THE BUS.

She sat near the back. The bus would start, reach twenty-five miles an hour, then stop. Not slow down. Stop. In midair, as it were. When it stopped, so did the world. The trees, pedestrians, and birds froze in midair, the birds glued to the sky. And when this occurred, Margaret grabbed the top of the seat in front of her, pressing it hard with her thumbs, hoping she could restart the world again.

She looked up. In front of her a little girl was kneeling on the plastic seat next to her mother, facing the back, staring at Margaret. The little girl had two pigtailed of brown hair, a bright-red coat, and round-rimmed glasses too large for her face. As the bus began to move, Margaret stared at the girl, frowning because she wanted the youngster to know that staring is rude, a sign of bad breeding. But as she scowled and frowned, and the bus passengers swayed like a chorus together, she was horrified to feel her

own eyes producing tears, which would run partway down her cheeks and then stop, as the bus itself stopped, as time halted. The little girl reminded Margaret of someone, someone she would never exactly remember again.

The girl's mouth opened slightly. Her eyes widened, and now she, too, was crying. Her glasses magnified her tears, which were caught by the rims in tiny pools. Margaret gathered herself together. It was one thing to cry herself for no special reason. It was quite another to make a little girl cry. That was contagion, and a mistake in anyone's part of the world. So Margaret wiped her eyes with her coat sleeve and smiled fiercely at the girl, even laughing now, the laugh sounding like the yip of a small dog. "*Toujours gai, toujours gai*," she said, louder than necessary, before she realized that little girls on buses don't speak French and would never have heard of archy and mehitabel even if they did. "There's a dance in the old dame yet," Margaret said, to finish the phrase, quietly and to herself. She drew herself up and looked serious, as if she were on her way to someplace. She was not about to be cried at on a public bus in broad daylight.

"What a nice day!" Margaret said aloud, but no one turned toward her. The little girl took off her glasses, wiped her eyes on her mother's coat, and gave Margaret a hostile look before turning around. "The old lady shows her mettle," Margaret continued, editorializing to herself, simultaneously making a mental note not to engage in private conversations where other people could hear her. It takes a minimum of sixty years' experience to recognize how useful and necessary talking to oneself actually is. When you're young, it just seems like a crazy habit. Margaret did not speak these thoughts aloud, as the bus whirled upside down and righted itself; she whispered them.

They went past a world of details. Sidewalks broke into spider-web patterns. A green squirt gun was in a boy's hand, but the bus was moving too quickly for her to see the rest of the boy. In a tree that she noticed by accident, a brown bird flew out of a nest. Something redbreast. Robin redbreast. The bus driver's head, suddenly in the way of the sun, shone a fine gunmetal blue. On a jungle gym, a boy wearing a green sweatshirt, smaller than Horace's, hung down from a steel bar with only his legs, his knees, holding him there. Margaret stared at him. How was it possible for a human being to hang by his knees from a bar? More important, why would anyone want to do it? Before an answer came, the boy faded out and was replaced by another detail, of a sea gull standing proudly in someone's alley, an arrogant look on its face. The sea gull cheered Margaret. She admired its pluck. The other details she saw were less invigorating: an old man, very white in all respects, asleep in a doorway; two young people, across the street from the art institute, kissing underneath a tree (the tree and the kissing made her flesh crawl); and now, at last, a cumulating, bright-pink, puffing cloud of smoke exploding out of someone's back yard,

someone's shed, on fire or dynamited, even the smell reaching her. The bus drove on and Margaret forgot about it.

She remembered her stop, however, and was halfway up the sidewalk when she remembered that she had forgotten to get out at the Safeway to buy groceries. She counted all her canned goods, in her mind's eye. "I'll be all right," she said, "and besides, there are more buses going here and there. It's their fate in life." She trudged on into the building.

Skinny Mr. Fletcher, employee of the United States Postal Service, had already come and gone with his Santa's sack of bills and messages. Margaret unlocked her mailbox, hoping for a free sample of a new soap. Instead, there was a solitary postcard inside, showing on its picture side Buster Keaton walking squarely down the middle of a railroad track. On the other side was a message from Horace, written in his miserable script. Some letters had been crossed out, but he had not given up.

Dear Margaret,
Happy ~~birth~~ anniversary
today
from love Horace
ps remember lightbulbs

Where had he mailed the message? Where, more important, had he found the stamp? How had he remembered the address? It was all very mysterious. The postcard was, of course, simply one of his monstrously large postcard collection, which he had taken with him to the First Christian Residence, over two hundred of them. He had traded a few for cigarettes. Margaret looked at Buster Keaton as she went up the stairs, the stairway extending and shortening, like a human-sized accordion.

She opened her door and stepped into the living room. On the left was her pastel-blue sofa, next to her Emerson radio and Muntz television set, and on the right was her mother's harmonium, underneath a mirror. Behind the sofa were bookshelves, filled with books she and Horace had read to each other: Robert Benchley, Don Marquis, Brooks Atkinson. She could remember their names but not the character of their work. "Feels like I'm walking through Jell-O," she meant to say, but no sound could make its way out of her throat.

She stood stranded inside the door, waiting for something to happen. At last the invisible steel wires holding her feet loosened for a moment, and she managed to get as far as the harmonium. Then the movie came to a halt again. She hadn't taken her coat off, nor could she. She was forced to look at more details: the spiral pattern on her white rug; the legs of the harmonium; her own white surprised face in the mirror. "I know where I am," she said.

"I'm home." But she didn't remember the mirror. Who had brought it here? Had it been delivered by Mr. Fletcher, from his sack?

"I should go to the kitchen," she said. "Or I should take a nap." Step by step, feeling the great work her progress required, she walked to the kitchen, weighted down by the thousands of details that were in her way. A nick in the floor, a jolly afternoon sun, a cookie crumb in the shape of an elf sleeping on the dinner table. A brown lamp with a tiny dial switch on its base, and hundreds of slits in its metal shade. And on the harmonium, photographs. Photographs of her three daughters, and one of herself, Margaret, and her husband, Horace, sitting down beneath a chandelier somewhere, and smiling. In the chandelier were eight light bulbs, their glass transparent, like Mazda bulbs, shaped from a broad base to a sharp tip, like a flame. "Well, I never noticed," she said. "You can't blame me for that."

In the kitchen, she was drinking water when she looked out the window and saw them. They were dressed in uniforms, and they had big arms and big faces. They had their truck in the alley and were carefully loading chairs, lamps, sofas, and tables into it. She noticed that they didn't joke as they took Mrs. Silverman's furniture away, that it was a solemn event, like running up a flag. Feeling foolish and annoyed, Margaret cranked open the window and began to shout. "Who told you boys to come here? Where do you think you're taking those things?" She noticed a lion painted on the side of the moving van and was momentarily disconcerted. "I hope you boys know what you're doing!" she shouted at last, down to the large, astonished faces. When they finally looked away from her, she lifted the glass of water to them, drank, then spilled out the rest into the sink.

She tried to remember what she had planned to eat for either lunch or dinner and found her way back into the living room, where she sat down in front of the television set. She saw, reflected in the dark screen, herself, in black-and-white, miniaturized. She smiled and laughed at the tricks television could play, whether on or off. And then, behind her, but also in the background of the set, she saw a tree, waiting for her. Horace had left his trees behind when she and he had moved out of the house. She stood up and went to the window again, and with the clatter of furniture being hauled away in the alley underneath serving as a background, she began to stare at the branches and dried leaves of the one tree the management had planted, and then she began to talk. She told the tree about Horace. Then she laughed and said that she and he would probably sit together again, checking on the sun and the other tricks of light shining from odd directions on the open gulf lying radiant and bare between them. □

*The threats to the resource are real,
but not insurmountable*

THE FUTURE OF WATER

BY PETER ROGERS

IS THERE A "WATER CRISIS" IN THE UNITED STATES? The impression has certainly been created in recent years that there soon won't be enough water to go around, and that much of what is left is likely to be poisoned. The 1982 report on the state of the environment by The Conservation Foundation, a nonprofit group devoted to the study of environmental policy, describes how excessive consumption of surface water has led to a reliance on groundwater, which has itself been depleted, and also stressed by contamination. In 1981, Robert Harris, a member of the Council on Environmental Quality during the Carter Administration, told a *New York Times* reporter that drinking water is "a significant public health hazard." An ongoing study conducted by the Environmental Protection Agency lends some support to Harris's charge. By last fall, the EPA had found that the groundwater supplies of 29 percent of the 954 cities in its sample were contaminated, chiefly by toxic wastes that had leached out of landfills.

A review of the popular press is a good way to gauge the conventional view of most questions. The cover of the June issue of *Science* 81 showed a rancher, a suburban householder, a miner, and an Indian gathered glumly around a water pump, with the caption: "Rationing the Colorado: Who Gets the Last Drop?" A quick look through back copies of *The New York Times* yields the following: the headline "Efforts to Gain 'Fishable-Swimmable' Waters Appear to Falter" (October 12, 1982); Representative Robert Edgar, of Pennsylvania, arguing on the op-ed page, "Is America running out of water? Yes. . . ." (September 23, 1982); the headline "Depletion of Underground Water Formation Imperils Vast Farming Region" (August 11, 1981); and the headline "Toxic Chemicals Loom as Big Threat to the Nation's Supply of Safe Water" (August 13, 1981).

Perhaps the most complete compendium of these concerns to date is Fred Powledge's recent book *Water: The Nature, Uses, and Future of Our Most Precious and*

Abused Resource, which is devoted to a description of what Powledge calls "the water crisis." Powledge writes that "the United States has entered a period of grave emergency in its supply of water," and that as far as contamination is concerned, "there is little indication that anybody knows what to do about it." He says, "We are learning that there is no escaping the poisons . . . at least with our current technology."

Most of what one reads about the pollution of water in every region, and the short supply in some parts of the country, is true. It is not true, however, that nothing can be done. Water's depletion and contamination are not irreversible. We have the technology and management skills to rise to the challenge; only the will to do so has been lacking.

Unfortunately, for many people, the response to news of contamination and shortage—or to the way in which the news is presented—is fear rather than determination. The anxiety arises in part from the fact that since the turn of the century we have been able to take unlimited amounts of clean water for granted. But as recently as the end of the nineteenth century, the mortality and morbidity rates from water-borne diseases were very high. (Because they remain high for the majority of the world's population, the United Nations has designated the 1980s the "International Drinking Water Supply and Sanitation Decade.") The engineering achievements of the nineteenth century and the early years of the twentieth were, in effect, too successful: as water in short supply and of poor quality became a distant memory, purity and plentifulness began to be assumed rather than systematically safeguarded.

ALTHOUGH THE RESULTS OF OUR POOR STEWARDSHIP are not beyond repair, they should not be minimized. Of these, contamination is by far the most notorious. In 1974, the Safe Drinking Water Act, which Congress passed largely in response to the efforts of environmentalist groups, forced many communities, often for the first time, to search for chemical contaminants in their water supplies, as well as for the traditionally monitored biological sources of pollution. People have been quite surprised by the exotic toxic chemicals that were

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found, and are still being found. Disclosures of the reckless disposal of toxic wastes, which, by leaching into the earth, can contaminate groundwater as well as soil, have not inspired confidence in either government or industry, and the addition of Times Beach, Missouri, to a long roster of contaminated sites has led many people to question the safety of their own surroundings.

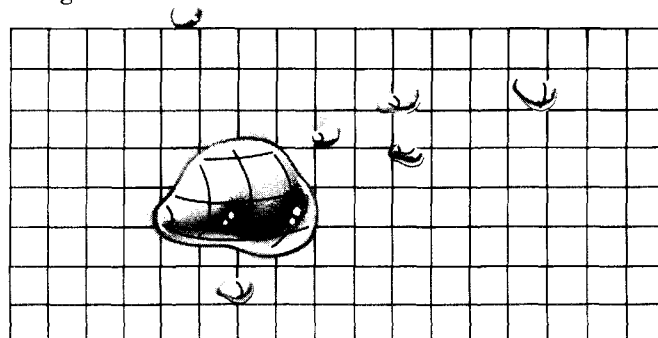
Some contaminants are showing up in water not because they have been recently introduced but because scientists have only recently become able to measure them in small concentrations. Moreover, the science of assessing the amount of contaminants in water is a good deal more precise than the science of assessing the effects of contaminants on human health. Here we find that definitive judgments are extremely difficult to make. Although much work remains to be done to improve these assessments, scientists may never know more about the toxic effects of many chemicals than they do now. Too many variables (what statisticians call "noise")—occupation, personal habits, diet, the presence of environmental insults other than the chemical in question, and so forth—exist in any given geographic area to allow clear linkages of diseases to specific contaminants. This frustration is not likely to diminish significantly with time; it represents an inexorable deficit in scientific understanding.

The public has little tolerance for the ambiguities that complicate statements about contaminated water's effects on health. Confronted with the lack of sure knowledge, many people assume that they are being manipulated for devious reasons. Often, in fact, the suspicion is well founded. Although the uncertainties about toxicity ought to be a warrant for extreme caution in any effort to purify water, they have served also as a refuge for manufacturers and the overseers of landfills, who can cite the uncertainties as a way of understating their liability once contamination is discovered. Under these circumstances, rational debate on how best to protect water is hard to sustain.

Safeguarding water's quantity and quality are two parts of a single enterprise—management—and most of the threats to water in this country stem directly from the fact that it is a common resource that has been managed chiefly in the service of private profit. Believing that water is limitless, we have made it available to industry and agriculture essentially at zero cost, and with few stipulations. Therefore, we should not be surprised or offended by the profligacy with which these users have exploited it. Few corporate officers who look to the bottom line of a financial balance sheet would insist on investing large sums to conserve or clean up a resource for which their companies did not have to pay much in the first place.

To worsen the consequences of this fundamental error, the country's shortsighted and rudimentary control of the environment makes it inevitable that the regulators will trail behind those regulated. Even as we restrict the permissible levels of some contaminants we discover others, and must set regulations on those as well, in a never-end-

ing game of catch-up. Similarly, as we undertake large and costly engineering projects to transfer water to farms and factories in regions where it is dwindling, we ensure that the practices that have led to a supply's depletion will persist. Both these obstacles are chiefly matters of policy, however, and policy—unlike the laws of nature—can be changed.



Poor planning is particularly obvious in the country's efforts to deal with chemical wastes, which are a chief source of water's contamination. Although a variety of treatment methods have been developed to make hazardous wastes safe, most wastes have been either stored untreated or indiscriminately dumped. Unfortunately, storage is at best a temporary solution, and an unreliable policy for the future.

The annual tonnage of hazardous wastes produced in the U.S., and other data equally fundamental to any reckoning of the threat to the water supply, are by no means firm. The EPA and other government agencies have not been collecting data for long, and the release of interim numbers to the scientific community and the press has given rise to inconsistent but often-cited figures. For example, a lengthy report on hazardous wastes, which Congress's Office of Technology Assessment (OTA) published in March, cited an estimate by the EPA that between 28 million and 54 million tons of federally regulated hazardous wastes are released in the U.S. each year. The OTA estimates that the total is instead somewhere between 255 million and 275 million tons. The enormous difference between these estimates, which is explained by the OTA's more liberal definition of hazardous wastes, can only complicate the government's efforts to control them. Moreover, within both the OTA's estimate and the EPA's, the margins for error are so wide—at least 20 million tons—that either one alone is a poor basis for policy.

Since no one can say precisely how many tons of hazardous wastes are produced in the U.S. each year, the fact that no sure figures are available on the extent to which chemicals have infiltrated the nation's water should come as no surprise. The United States Geological Survey (USGS) oversees more than 500 stations around the country, which supply regular information on the quality of surface water. These stations do not keep track of all pollutants, however. They do not measure most of the potentially toxic chemicals, and those they do test for

elude detection at the low concentrations that would be expected in large volumes of water—concentrations at which the pollutants may nevertheless have significant adverse effects. Thus, although the data the USGS does provide indicate that the country has been able to hold its own with respect to conventional pollutants, such as municipal sewage, the extent of contamination of surface water by unconventional pollutants is barely known.

As for groundwater, *no* systematic monitoring has been undertaken. Instead, we have only incidental evidence, brought to light, by and large, by concerned individuals. In the San Gabriel Valley of California, for example, thirty-nine wells that supplied water to thirteen cities had to be closed in 1980 when they were found to be polluted by high concentrations of trichloroethylene (TCE), an industrial solvent and degreaser. Seven municipal wells and thirty-five private wells near Atlantic City, New Jersey, had been closed by March of 1982, after wastes from a chemical dumpsite were found to have seeped through the sandy soil into groundwater. In Bedford, Massachusetts, four wells providing 80 percent of the town's drinking water were closed in 1978 when they proved to have been contaminated by high concentrations of dioxane and TCE, among other toxic chemicals. By 1979, drinking water in a third of the communities in Massachusetts had been found to be contaminated. In the spring of 1980, the federal Council on Environmental Quality compiled all the reports of groundwater contamination that had been filed at the EPA's regional offices. The results showed that contamination had occurred in at least thirty-four states: in nearly every state east of the Mississippi River, and in the less industrial western states as well.

Although the EPA is conducting tests of drinking-water wells scattered nationwide, it has concentrated chiefly on locating potential sources of contamination. By the end of 1982, the agency had found 80,263 pits, ponds, and lagoons in which industrial, municipal, agricultural, and mining wastes are impounded. Fewer than 10 percent of these sites have been investigated, and of these, only half are being checked on a regular basis to ensure that clean-up is proceeding. In addition to these impoundments, approximately 16.6 million septic tanks routinely disperse their effluent—about 800 billion gallons a year—into the ground. Septic tanks can be a source of chemical as well as biological water pollution, because of the popularity of cleaning fluids sold to flush out sludge. The fluids contain TCE and benzene, which are both known carcinogens. Finally, the 14,000 active municipal landfills, many of which receive industrial wastes as well as the solids from sewage-treatment plants, and the 75,000 active industrial landfills generally are unlined and leach their contents into ground and surface waters.

Given the volume of contaminants released into groundwater, the fact that they have taken so long to show up may seem puzzling. But most of the chemicals are tasteless and colorless, and therefore hard to detect, especially at

low—but nevertheless potentially toxic—concentrations. Moreover, water travels through the ground quite slowly; a contaminant may emerge in a well years after it was released from a source even a short distance away.

THE INSIDIOUSNESS OF THE POISONS, THEIR WIDE geographic distribution, and the frequency with which they appear when tests are conducted understandably provoke reactions of panic or despair. Remedies do exist, however. We can insist that manufacturers reduce the amount of waste they produce; we can treat the wastes before disposing of them; we can treat water after it has been polluted; finally, we can restore an entire area after wastes have been discharged. Of course, some combination of these strategies is also possible. It is generally recognized, however, that the cost of cleaning a site after untreated wastes have been dumped is somewhere between ten and a hundred times the cost of treating wastes before disposing of them. The first two options are therefore clearly the best policy.

Any landfill, no matter how well engineered, is likely to leak eventually. Thus, to start with, landfills might be designed in such a way that the leaks would be directed into collectors; even then, they will have to be checked over a much longer period than the thirty years now required by the EPA, because of the extreme corrosiveness and long lives of many of the chemicals contained. Beyond this, technologies for treating wastes are already in place at many manufacturing plants, and the advantages and disadvantages of potential improvements on these should be explored. Segregating the harshest wastes before they are released to a treatment facility (rather than shipping them in mixed form), and altering manufacturing processes to make their by-products more benign and to allow for recycling, appear to be relatively cheap but effective ways to control potential contaminants at their source. Wastes can also be burned. Incineration is not appropriate for all chemicals, however. The most toxic ones must be subjected to extremely high temperatures—an expensive and not yet perfected technology—to keep the gases given off from polluting the air. Dumping hazardous wastes in canisters in the ocean and injecting them in the earth at a depth of 5,000 feet or more—that is, far below easily accessible water tables—are two other possibilities. (Even now, in many coastal cities, the effluent of sewage-treatment plants is freely discharged into the ocean.) Both plans are risky, however, because they bring untreated wastes into direct contact with the environment. Eventually, canisters will leak or break up in the ocean, but, according to proponents of this strategy, the wastes released would be so diluted that their toxicity would be nil. Shifts in ocean currents could defy this theory, though, and wash the wastes in close enough to shore to pose a threat after all. The chemicals could also be ingested by fish and find their way into human diets. As for deep injection wells, wastes could

migrate upward along unsuspected fault lines; earthquakes and other unforeseen geophysical phenomena could disturb them too. Chemically breaking down batches of wastes into less toxic forms or decomposing them with bacteria are perhaps the best tactics tried so far, because they ensure that all hazards have been eliminated before a substance is released from a plant.

There is no doubt that, at a price, the country can safely handle its wastes. Prices quoted by nine large firms that treat chemical wastes to bring them up to acceptable safety standards range between \$55 and \$240 per metric ton. Generously assuming a price of \$250 a ton to treat 54 million tons of hazardous wastes a year (the maximum volume estimated by the EPA), the annual cost would be about \$13.5 billion. This cost could rise, of course, as more chemicals are analyzed and found dangerous.

Is \$13.5 billion, or more, a year a high or a low price to pay for the safe disposal of chemical wastes? There is no easy answer to this question. Consider, however, that this sum represents 2 percent of the annual contribution of manufacturing to the GNP, and 0.4 percent of the GNP as a whole. It should also be kept in mind that this \$13.5 billion would not be lost, as payments for imported oil are. Rather, it would create and stimulate a substantial industry—in its own right.

A task more arduous than controlling wastes before they assault the environment is cleaning them up after the fact. How a site is cleaned up varies with its proximity to houses and drinking-water supplies, the type of soil, the disposition of groundwater, the specific chemicals dumped, and how they were dumped (in liquid or solid form; in containers or not). Generally, though, problem dumpsites can be handled in one of three basic ways: isolating the site by surrounding it with trenches lined with clay or some other nonporous material, and lining and capping the site itself; diverting the flow of any water through the site, underground or on the surface; removing the wastes and the soil and water they have polluted, decontaminating them by one of the methods cited earlier, and storing them at a controlled landfill.

These options are not uniform in cost. Clearing a contaminated site and treating everything removed from it entails a good deal of money and labor, but once the task is accomplished, little else is required. In contrast, steering water away from a contaminated site is less expensive initially, but purification plants nearly always must be built to ensure that the water is truly safe, and so maintenance costs can be high. Moreover, regular tests for toxicity are essential, no matter how a contaminated site is handled. The EPA's crisis-management strategy has been simply to transfer the contents of a dumpsite, without treating them, to other landfills, which are themselves prone to leaks. Although the EPA's response has the advantage of being fast and relatively cheap in the short term, its ultimate wisdom and cost-effectiveness are dubious.

The obstacles to cleaning up hazardous wastes, like the

obstacles to treating them, are economic, and therefore political, rather than technical. The OTA reports that some 15,000 uncontrolled dumpsites are in need of attention. The total cost is estimated at between \$10 billion and \$40 billion—many times the \$1.6 billion that the federal government expects to collect from chemical manufacturers for its environmental "Superfund," established in 1980. If the country chooses to accept the expense, however, the goal is within reach.

ASIDE FROM THE STEPS THE COUNTRY CAN TAKE TO protect water from contamination, there are ways to protect the public from the toxic effects of contaminants already in water. No contaminants appear to have an irreversible effect. What we put in water, we can usually extract—at some cost. Indeed, only the cost and long-term efficacy of the available technologies remain to be established.

The most reliable method that has been developed so far is the granular-activated-carbon (GAC) filter—essentially ground-up charcoal. (Other filter mediums, such as synthetic resins, are also being studied.) The filter works by a physical process called "adsorption." Molecular attraction causes the chemicals flushed through a carbon filter to adsorb, or stick, to the carbon's surface. Once the grains of carbon are covered completely, they are either restored by being subjected to a high temperature, which drives off the chemicals adsorbed (if the filter is a large one, at a municipal plant), or discarded (if it is small, attached to a household tap). There is little risk involved in the disposal of household filters, because they are small and because, in any case, the molecular bond is extremely strong.

A special advantage of carbon filters for municipal drinking water is their proven ability to trap not only chemical wastes that have infiltrated the system from outside but also unwanted chemical by-products of chlorination. The great reduction in water-borne diseases in the U.S. has been sustained by chlorine, which rids water of harmful bacteria. It turns out, however, that chlorine reacts with natural as well as man-made chemicals in water to create a family of chemicals known as trihalomethanes, one of whose members is chloroform, which has been shown to cause cancer in animals. Flushing water that has been disinfected with chlorine through a carbon filter at the end of the treatment cycle can efficiently remove trihalomethanes and any other hazardous organic chemicals present, according to a report released in 1980 by the National Academy of Sciences. The report cautions that further study is needed to make sure that potentially toxic chemical reactions do not occur on the carbon and that no micro-organisms build up in the filters, but it concludes that there is already "ample evidence for the effectiveness of GAC," and advocates the filter for municipal supplies threatened by contamination.

In 1978, the EPA proposed carbon filters as the option of

choice for the control of hazardous chemicals in water. Soon after, a group of ninety investor-owned water utilities, the Coalition for Safe Drinking Water, was formed to resist any EPA requirement on that score. Although the coalition expressed doubts about how well the filters would work, their underlying complaint was cost. Studies sponsored by the EPA in response to the coalition's objections have shown that for cities with a million or more residents, the cost of water would rise between 17 and 21 percent. In relative terms, one could argue that the increased cost would be large. But in absolute terms, and considering how cheap water is everywhere in the U.S. at present, the increase would be modest; based on the EPA's figures, for a family of four it would range between \$11.81 and \$60.25 a year.

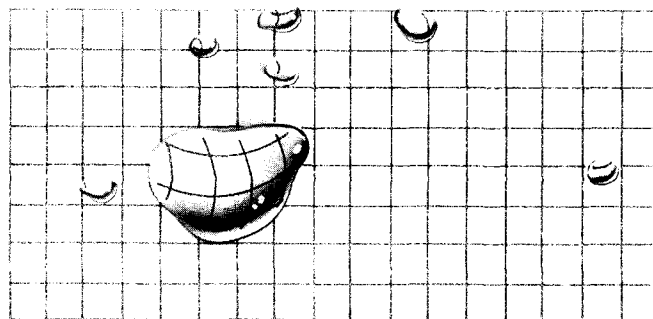
Many water utilities have been using carbon filters to control taste and odor and to treat waste water; some have installed them specifically to control toxic chemicals. In Europe, many cities have been using carbon filters for this purpose alone for several years. So far, however, the EPA has not ordered any utilities to install carbon filters. The EPA does require large community systems—representing about 54 percent of the American population—to test for trihalomethanes and other contaminants. People who are concerned that their water might not be safe could ask their utilities for the results. Local health departments may also be able to provide this information, and some may even be willing to accept a sample and test it themselves. Independent tests of domestic water supplies are expensive, but they are the only recourse for the 33 million Americans whose water comes from their own wells.

Fortunately, some of the household-sized carbon filters on the market do a very good job of ridding water of chloroform, trihalomethanes, and other toxic chemicals. *Consumer Reports* reviewed fourteen of them in its February, 1983, issue, and rated five "very good" or "excellent." The three best were Culligan Super Gard SG-2, at \$175 (\$23 for replacement cartridges); Sears 3464, at \$23 (\$7.50 for replacement cartridges); and AMF-Cuno AP50T, at \$67 (\$12 for replacement cartridges). The magazine gave the Sears filter its "best buy" rating, because of its effectiveness and low cost. In Rockaway Township, New Jersey, a dozen houses relying on contaminated well water have been fitted with such small carbon filters, and tests show that the water is up to acceptable safety standards.

An investment in the treatment of contaminated water need not be an endorsement of the uncontrolled release of hazardous substances into the environment. But treating contaminated water can protect the public health for relatively low additional costs while the country goes about cleaning up the mess it has already made.

A good engineering approach is to be very conservative, and to set the highest standards affordable. It is legitimate to ask whether or not the cost of improving the quality of water is too high, but it is also legitimate to ask, compared with what? If the cost is compared with what industry, ag-

riculture, and households now pay for water, it does seem large. But if we compare the cost with the value of water that won't make us sick, it is small. By any standard of comparison, the eventual expense that is likely to result from current policies, which protect water only haphazardly at best, will be enormous.



ALTHOUGH BY NOW IT IS A COMMONPLACE TO SAY that we live in an era of limits, water is still managed in accord with presumptions, laws, and institutions that do not reflect a recognition of these limits. Abel Wolman, professor emeritus of environmental engineering at Johns Hopkins University, and one of the world's foremost experts on water supply, was quoted in *The New York Times* on August 9, 1981, as saying:

Water is cheaper than dirt. That means there is no orderly design as to when and where to use it. In a vast country such as ours we have never been able to organize a thoughtful, logical national plan, and I am very doubtful we ever will.

One does not have to be an economist to see the problem of underpricing. Common sense tells us that people waste commodities that they do not value highly, or commodities that, though valued highly, are supplied cheap.

Both in the Southwest, where water shortages are permanent and likely to worsen if present consumption rates continue, and in the Northeast, where shortages are periodic and rarely dire, water prices are extremely low. Indeed, they are lower by half here than they are in Europe. People in Frankfurt, Germany, pay \$2.82 per thousand gallons, whereas in Los Angeles, which is significantly more arid than Frankfurt, people pay only \$0.60 per thousand gallons. This disparity in prices is reflected in the sharp contrast in rates of consumption between the U.S. and Europe. The average amount of publicly supplied water for all nonagricultural purposes in the U.S. is about 180 gallons per capita per day ("gpcd"), of which 120 gallons go to households and for municipal uses, such as street washing and fire fighting; the rest goes to manufacturing and businesses. Yet in countries with comparable levels of social and economic development, consumption is a fraction of the U.S. rate. The rate in Germany, for example, is 37 gpcd; in Sweden, 54 gpcd; in France, 30 gpcd; and in the United Kingdom, 53 gpcd.

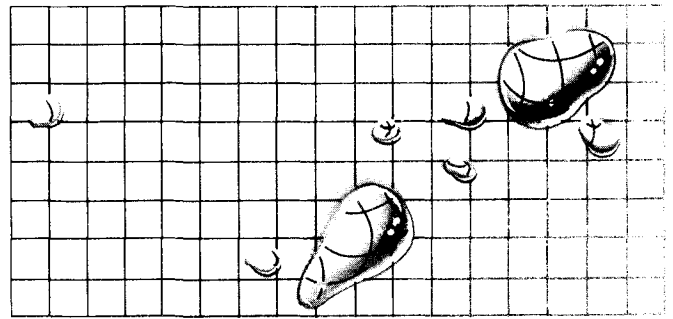
Price differentials alone do not explain the large differ-

ences in water consumption in these societies. Consider that in New York City, where water prices are on a par with those elsewhere in the East, the rate of consumption is reported to be 180 gpcd, and supplies to most residential users are unmetered. (As it turns out, the rate of consumption in cities where water is metered is roughly half the rate in cities without meters.) In Boston, water prices are also in the range of prices elsewhere in the East, yet the rate of consumption is 233 gpcd—well above the national average. As much as 40 percent of that amount is lost to leaks in the system. Best guesses as to the effect of doubling Boston's 1978 price of \$1.18 (now down, to \$1.00) per thousand gallons suggest that consumption would be reduced at most to 160 gpcd—still four times Frankfurt's rate of 40 gpcd.

Something else in addition to price seems to influence water consumption in the U.S. Americans may be able to recognize, in a theoretical way, the pressures that serve to diminish supply, but they seem unable to keep conservation in mind when devising distribution schemes that borrow from reserves necessary for the future, when confronted with the need to renovate old and wasteful utilities, and when watering lawns and taking showers. Thus, even where water is least plentiful in the U.S., prices rarely reflect supply. Indeed, prices are lowest where water supplies are lowest: \$0.53 in El Paso and \$0.59 in Albuquerque, compared with \$1.78 in Philadelphia or \$1.00 in Boston. Moreover, a rise in price does not seem to provoke a commensurate decline in demand. Perhaps American prices are so low that even when they are raised they fail to make an impression on consumers. Can the average homeowner even remember the amount of his last water bill? And how does that expense compare with the cost of an evening's entertainment, or a tank of gas?

However low the price of municipal water in the U.S. appears in comparison with prices in other countries, it is high in comparison with what American farmers pay. The price of agricultural irrigation water in the U.S. ranges between about \$0.009 and \$0.09 per thousand gallons, and federal subsidies make up the difference between price and cost. The amount of subsidy in the more arid parts of the country is staggering, in fact. In eighteen western federal irrigation projects that the U.S. Department of the Interior studied in 1980, the government was providing between 57 and 97 percent of the costs over the lifetimes of the projects. This works out to an amortized value of between \$58 and \$1,787 a year for every acre subsidized. Kenneth Frederick, an economist at Resources for the Future, Inc., a nonprofit organization for the study of environmental questions, based in Washington, D.C., wrote in his book *Water for Western Agriculture*, published in 1982, that for all Bureau of Reclamation projects, water subsidies total, on average, at least \$500 per acre over the life of a project. Thus, for a 160-acre farm, the subsidy might total \$80,000, and in some water-short regions it could be as high as \$286,000. Until recently, a 160-acre farm was the largest

eligible for federally subsidized water under the 1902 Reclamation Act. An amendment to the act was passed last summer, however, which raised the ceiling to 960 acres for individuals and to 640 acres for corporations. The amendment merely acknowledged the fact that the Bureau of Reclamation had been providing subsidies to farms larger than 160 acres for some time. Simple arithmetic shows that for the largest farms now eligible, the subsidy can rise to between \$480,000 and \$1,715,510 per farm. Senator Daniel Patrick Moynihan, of New York, who has been persistent in calling for more rational water policies, argued on the Senate floor that the bill represented "all that is wrong with federal involvement in water resources: chaos, arbitrariness, inequity, and waste."



WATER IS NOT LIMITLESS, BUT, CONTRARY TO THE views of alarmists, there is no absolute danger that it will run out. The U.S. as a whole can count on at least fifty years without serious shortages, even at the present wasteful rates of consumption. Extremely difficult choices will have to be made soon in some regions, however, and almost everywhere methods of allocating present supplies and developing new ones need to be more conservative. For water's quantity as for its quality, it is not nature that could prove intractable but policy. The nation has the power to abandon various water-intensive activities in favor of others less demanding on supplies, and the opportunities are numerous enough to make the transition relatively painless.

Annual precipitation in the continental U.S. is about 4,200 billion gallons per day (bgd), on average. Of this amount, 1,400 bgd should be available for all our uses; the rest evaporates. But yearly fluctuations in precipitation further diminish the supply, in ninety-five out of a hundred years, to 675 bgd. The variability of precipitation should be obvious to everyone this year. Rainfall has been well above normal rates in all parts of the country. Notwithstanding the costs that will result from flooding and soil erosion, these rains could bring important benefits: increased supplies in surface reservoirs, an increased volume of groundwater, and increased soil moisture to ease the demand for irrigation. Unfortunately, though, the amount of water that can be carried over from wet years, such as this one, to drier years is quite small, because the capacity of American reservoirs to store it is limited.

According to the U.S. Water Resources Council, the na-

tion's total average daily consumption in 1975—the most recent year for which the council made an estimate—was 106 bgd. Of this amount, fully 83 percent was used in agriculture. Improved irrigation efficiencies could reduce this share substantially. A tremendous asymmetry exists between agriculture, which consumes 83 percent of the nation's water but contributes only 3 percent to the GNP, and manufacturing, which consumes less than 6 percent of the water but contributes 27 percent to the GNP.

Nearly a quarter of the total amount of water consumed in the U.S. is drawn from the ground. Between 1950 and 1975, the demand for groundwater increased 140 percent. Groundwater accounts for half of the irrigation water used in the West, and some appealing features make it a prime target for development. First, a tremendous quantity is stored in American aquifers—underground streams and basins. The Water Resources Council estimated in 1978 that more than a thousand times the amount of water consumed in 1975 lay within 2,500 feet of the surface. Second, groundwater can be used to even out the natural fluctuations in precipitation from year to year. And third, in many areas, groundwater is the only source that remains to be appropriated.

Unfortunately, in addition to those advantages, there are some drawbacks. Extracting water from the ground demands a good deal of energy. Also, the rate of replenishment, or "recharge," is slow—typically less than 10 percent a year, and only slightly faster in years like this, when precipitation is above average. These drawbacks are now becoming critically evident in the West, where, since 1950, development has depended largely on groundwater sources. As a result, annual withdrawals of water in excess of the amount recharged to an aquifer—"overdrafts"—range between 4 and 95 percent in those regions in which farm acreage is increasing most rapidly. In Texas and the Oklahoma High Plains (the site of the vast Ogallala aquifer), the annual overdraft is equivalent to the unregulated flow of the Colorado River—approximately 14 million acre-feet a year. (An acre-foot is the amount of water needed to cover one acre to a depth of one foot.) In all of the western states, the overdrafts exceed 20 billion gallons a day, or 22.4 million acre-feet a year. In the remaining states, overdrafts have been less substantial, rising to one billion gallons. These data show that enough water to irrigate 10.7 million acres is being withdrawn in excess of replenishment from American aquifers. Although overdrafts for short periods do no harm, for the long term they deplete aquifers, and pumping costs rise as a result.

CONSUMPTION HAS MEANING ONLY IN TERMS OF supply, and supply is not always easy to predict, because it is subject to technology, politics, and the economy, as well as to natural constraints. For example, a serious effort has been made during the past fifteen years to modify weather in ways likely to increase precipitation.

These techniques—seeding clouds with silver-iodide crystals, for example—are still experimental, but they may prove workable eventually. A problem that engineers have yet to solve is that efforts to increase rainfall in one area might decrease it in another. Then there is desalinization—a technology that has attracted a good deal of publicity and that has been employed successfully in harshly arid parts of the world, such as the Middle East and some islands in the Caribbean. However, desalinization is well enough established now to support the prediction that in the U.S. it will always be too expensive for farming purposes—the only source of demand that could seriously deplete supply here.

Just as human intervention can enhance the water supply, human intervention can diminish it. For example, if the federal government were to impose a ban on overdrafts of groundwater, the supply available to consumers could drop by 25 percent in the country as a whole, and by an even greater percentage in the West. The burning of fossil fuels may have provoked a buildup of carbon dioxide in the atmosphere, and evidence is accumulating that if such a buildup has indeed occurred, the small changes in temperature that will result will lead gradually to large changes in rainfall in the country's mid-latitudes. According to Roger Revelle, a member of a panel on the buildup of carbon dioxide in the atmosphere which was convened by the National Academy of Sciences, if the average air temperature increased by several degrees centigrade at a latitude of about 40° north, a 15 percent decline in precipitation would follow, reducing the flow of the Colorado River system, for example, by half. This could create major agricultural dislocations in Colorado, Utah, and Arizona. Revelle says that a decline in precipitation at this latitude across the U.S. might begin to be felt within the next fifty years. So far, though, the change in the earth's atmosphere and its potential effect on weather are only hypotheses.

The effect of politics and the economy on the country's water supply is easy to demonstrate. A huge federal pork barrel is based in part on the construction of dams and the transfer of water from one basin to another, both of which serve to increase a water supply when it runs short. Between 1965 and 1980, \$52 billion was spent on all water-resource projects—inland waterways, ports and harbors, multi-purpose dams, and so forth—by four federal agencies: the U.S. Army Corps of Engineers, the Bureau of Reclamation, the Tennessee Valley Authority, and the Soil Conservation Service.

The Bureau of Reclamation's Central Arizona Project is a good example of how the money is used. This project has been under construction since 1973, and is 38 percent complete. Ultimately, it will divert 1.2 million acre-feet of water a year from the Colorado River basin to the cities of Phoenix and Tucson, and to the agricultural land in between. The water has to be lifted 1,200 feet over a granite reef to a 300-mile-long aqueduct. Most of the water is intended to compensate for the depletion of aquifers by

farmers for irrigation; the project will not provide enough water to allow for any expansion in irrigated farmland, or for any further development of cities and industries.

The bureau estimates the project's final cost at between \$1.4 billion and \$2 billion; estimates made by others are substantially higher. When federal agencies undertake projects like this one, they pay most of the cost; the share borne by the beneficiaries is very small. Moreover, only 6 percent of the \$52 billion budget for water projects between 1965 and 1980 was allocated to the Northeast, where 24 percent of American taxpayers reside, and where water systems are generally old—in need of renovation and expansion. The West received 35 percent of the expenditures, though its share of the population is only 17 percent. As a result of this inequity, many congressional representatives of states and districts outside the West have opposed western water-reclamation projects in recent years; indeed, no major package of water-resource projects has been authorized since 1976. A good deal of money remains to be spent, however. According to the General Accounting Office, the cost of the 289 authorized projects still under construction by the Bureau of Reclamation and the Army Corps of Engineers totals \$57.4 billion; of this sum, \$22 billion had been spent by the end of fiscal year 1981. Another 645 projects have been authorized, with funds yet to be appropriated.

One can object to expensive water projects on the narrow grounds that if they are truly needed, then the beneficiaries should pay for them. But the question of their financing aside, many water projects entail no riders to ensure that the increased supplies will not merely perpetuate a wasteful status quo, in which users who have consumed water indiscriminately can persist in doing so. Federal water projects attract development in regions that have already been developed to a point that strains existing supplies, and they encourage farmers to cling to thirsty crops and inefficient irrigation practices that ought to be abandoned. For example, water supplied by the Bureau of Reclamation to the Grand Valley of Colorado is so highly subsidized that the farmers rely on flood irrigation—they simply cover entire fields with water. Flood irrigation uses up to six times more water than “big wheel” and fixed-sprinkler systems, which are themselves by no means the most advanced and efficient techniques available.

If water and water rights were freely bought and sold, the demand for water would be easier to control; the market would help to establish the most efficient use of the resource. But most water supplies and rights are protected under legal and institutional arrangements that have been worked out over time in accord with objectives other than equity and economic efficiency. The two major legal doctrines—riparian rights and prior appropriation—were designed to secure the land titles of settlers. Riparian rights, which are observed chiefly in water-abundant eastern states, allow the owner of land adjacent to a body of

water to make use of the water so long as no inconvenience is caused to his neighbors. Prior appropriation, which is observed in water-short western states, ranks the claims of settlers according to how early their homesteads were established. When a property owner fails to exercise his rights, they lapse. The doctrine is analogous to the pressure on a manager within a corporation to spend all the money budgeted or suffer a cut in funds the following year. Thus, prior appropriation, far from being an incentive for farmers to use less water, is an incentive for them to use as much as they can. In many cases, water rights are attached to parcels of land or specify particular uses. As a result, late arrivals—industries, municipalities, or other farmers—often have trouble acquiring water at any price.

If Indian water rights in the western states are ever enforced, they will reduce substantially the amount of water available to everyone else in those states. The Winters Doctrine, based on the 1908 Supreme Court ruling in *Winters v. United States*, holds that when the federal government claims land for any purpose (specifically, to create an Indian reservation), it at the same time implicitly claims sufficient water to accomplish the purpose for which the land was set aside. At present, Indian water rights remain unquantified, but the Navajos, for example, could legitimately claim as much as a third of the flow of the Colorado. In New Mexico, pending claims by several tribes add up to many times the present allocations of water to all the irrigated farmland in the state.

Water is largely in the hands of the states, and it was only in the nineteenth century—with the passage of the Rivers and Harbors Act of 1826, which established federal control over interstate navigation; the Refuse Act of 1899, which controlled dumping in navigable waters; and the Reclamation Act of 1902, which established a federal role in enhancing water supplies in the West—that the federal government involved itself at all. The state laws are complex, having evolved, much like federal tax laws, over a long period, and there is little chance that a single national code will ever be devised, much less approved, to replace them. In fact, such a code would not even be desirable in this country, where there is so much variation in supply and demand from one region to another. But it is clearly in the interest of the states, perhaps with the guidance of the federal government, to plan equitably in ways that exploit the legal structure rather than conflict with it.

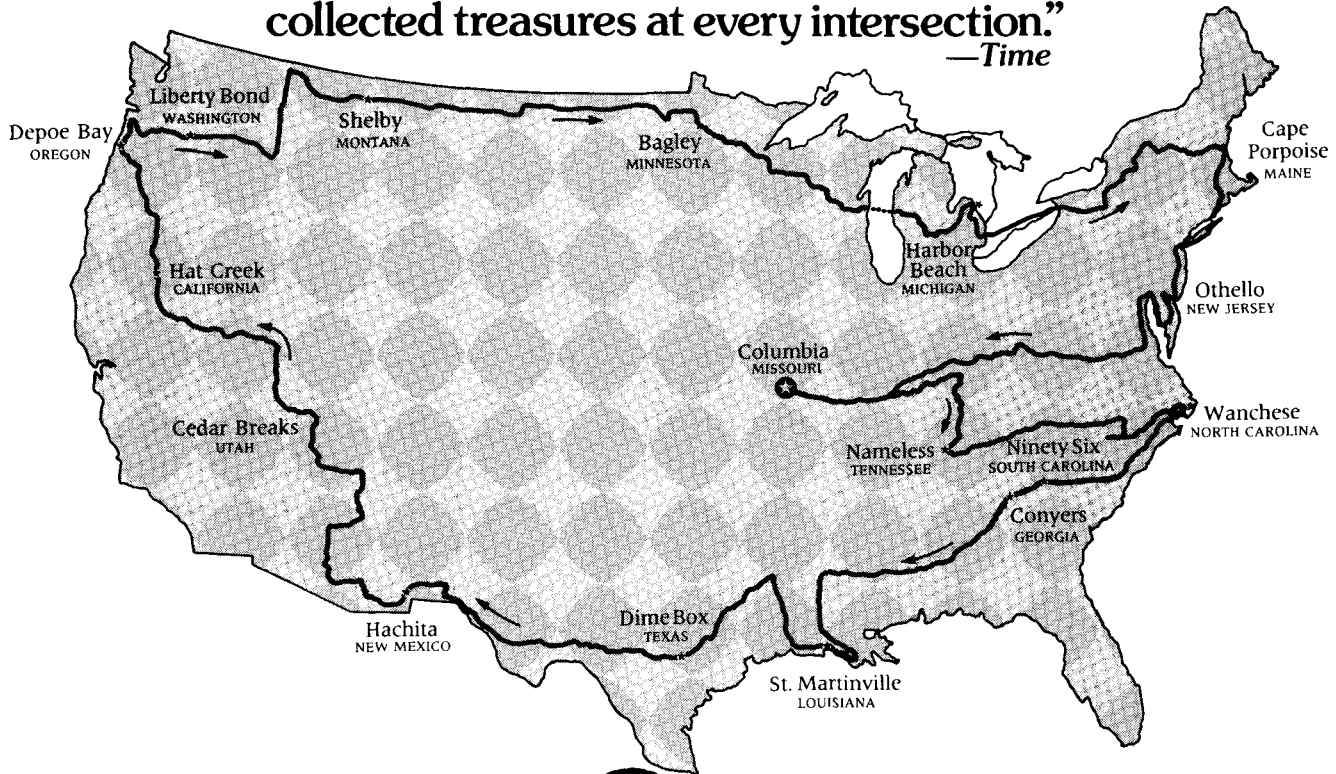
WATER RIGHTS MAY BE UNBREAKABLE, BUT THEY can be bent. For example, a state might offer grants to farmers to offset the cost of adapting farms so that they consume water more efficiently. In exchange, the state would be entitled to the surpluses achieved—water that could then be diverted for municipal and industrial uses, and to increase reserves. Alternatively, since the economic return on water for agriculture is significantly lower than the return on water for manufac-

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turing, industries in arid parts of the country might be enabled, through state intervention, to meet their needs by a mechanism as simple as competitive bidding.

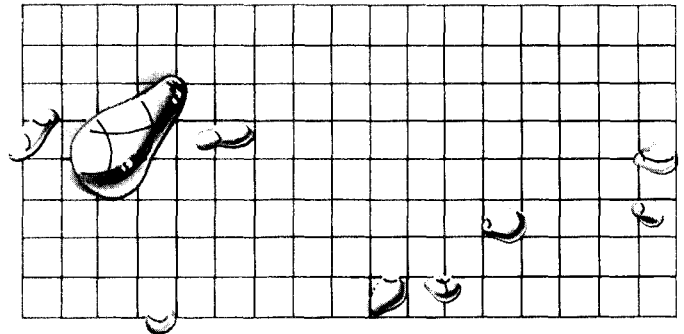
Arizona's Groundwater Management Act—the first comprehensive state law to limit the pumping of groundwater—is a worthy precedent for the thoughtful redistribution of water. It was the severity of groundwater shortages in that state that prompted construction of the Central Arizona Project, but the project will supply only two thirds of the water needed by the year 2000, at current rates of consumption. Thus, the act calls for wells to be registered, and levies fees on the water withdrawn. It calls on farmers to improve irrigation efficiencies, and if these efficiencies are not adequate by the year 2005, it allows the state to buy and retire as much farmland as necessary to restore the natural balance. The act also requires housing developers to secure state certification that a 100-year supply of water is available before construction can proceed.

Harvests need not suffer if farmers use less water than their water rights entitle them to; the agricultural and social optimums rarely coincide, and, given the subsidies, there is no reason why they should. On average, irrigated crops consume only 53 percent of all the water that a farmer withdraws. At farms dependent on surface water, irrigation efficiencies are typically less than 45 percent. At farms dependent on groundwater, the efficiencies are better than 60 percent. The difference is a matter of economics. Irrigation water from surface supplies, which reaches farms through federal or privately managed canal systems, costs a good deal less than groundwater, which farmers must pump themselves. With improved irrigation systems, these efficiencies could rise to between 65 and 75 percent, or higher.

Many farmers—not just those in Colorado's Grand Valley—irrigate by flooding. Alternatives to this practice are "permanent furrow systems," which collect rainwater and surplus irrigation water and channel it to storage ponds for future use; concrete or plastic pipes that carry water underground from the water source to the furrows, reducing the losses to evaporation and seepage incurred by open channels; and "drip irrigation," in which plastic tubes feed small increments of water directly to the roots of each plant. Drip irrigation both inhibits evaporation and allows plants to be fed only as much water as they need; farms in Israel using this method have been reported to achieve efficiencies as high as 95 percent.

Besides reducing total water consumption, farmers might also tap supplies of brackish water, for which there is no competing demand. A rule of thumb in agriculture holds that "if you can drink the water, it's all right to use it for irrigation." Yet some crops—barley and cotton, for example—can flourish with brackish water. Crops less tolerant of salt, such as corn and beans, can also be grown in brackish water if it is supplied in such quantity that the salt is washed past the roots. Running tiled drains under

the root zones of the plants also helps to keep salt concentrations low. Brackish water occurs inland as well as near the sea. Thus, adapting drainage systems to accommodate brackish water and growing crops that can thrive on it—leaving sweet water for other uses—are conservation options for farmers everywhere in the U.S., not just those in coastal regions. Brackish water could also be substituted for sweet in air-conditioners, washing machines, and industrial washing and rinsing processes.



THE HOMILY "MOTHER NATURE KNOWS BEST" IS AS true of water as of any other environmental resource. In many arid regions of the U.S., farmers have been able to cultivate crops that are more water-intensive than the resource ultimately can support, because water is cheap. But when a water supply is exploited to the limit of its capacity, nature asserts itself in ways that should force farmers to conserve. As a water table drops, pumping becomes more expensive. For a while, farmers may persist in their withdrawals, choosing to pay for more fuel to run the pumps, or to drill new wells. Eventually, however, the cost will rise higher than farmers can afford, and at that point they will abandon their farms or turn to the crops that can thrive with little or no irrigation, such as sorghum, wheat, and soybeans.

Society can be content with this self-regulating system so long as the irrigated crops lost are not essential to health or economic survival. The system can be hard, however, on the farmers at its mercy, and some form of government subsidy ought to be made available to compensate them at least partially for the cost of converting to different crops. Such compensation is sure to cost much less than the federal projects conceived to increase water supplies artificially.

Does the nation depend on crops irrigated with water from the Ogallala aquifer? Do we need Arizona's cucumbers? The most recent comprehensive study of the question, conducted last year by Kenneth Frederick, shows that we do not. Frederick found that out of a national total of 547 million acres of cropland and pastureland, only about 61 million acres are irrigated. The Center for Agricultural and Rural Development, at Iowa State University, which is the leading research group on American agricultural needs, has predicted that only 32 million irrigated acres will be needed to meet the demand for food and fiber in the U.S. in the year 2000. The Center asserts that even this

acreage can be irrigated at lower cost, in both water and dollars, using existing technologies. Clearly, if irrigated acreage can safely decline by half over the next twenty years, the country does not desperately need to water the desert, nor does it need to devote so much of the water it consumes to the task. With a decline in irrigated farmland, and the adoption of more efficient irrigation methods, an enormous amount of water can be saved for drinking and other uses.

Industry has already markedly reduced its demand for water, as a result (unintended) of the Water Pollution Control Act, which Congress passed in 1972. Predictably, economic constraints have proved a powerful motive for change. The act requires industries to treat their own effluents, or to pay others to do so; to cut that cost, firms have found it in their interest to produce less waste. The Water Resources Council estimated in 1978 that by the year 2000, industry will withdraw 62 percent less fresh water than it did in 1975, although its consumption of water will increase by as much as 150 percent. Industries will make up the difference by recycling the water they do withdraw from the nation's supply.

Industries can reduce their demand for fresh water substantially merely by keeping a cleaner house. A large textile plant in São Paulo, Brazil, was able to use 39 percent less water within two years after the city levied a nominal charge for the treatment of its effluent, and the reduction was virtually costless. The plant resorted to such simple practices as shutting off taps when no water was needed and using some wash waters more than once. Where plants are being replaced or renovated, changes in manufacturing processes can also bring about large savings. A new paper-pulping technology developed in Sweden has been demonstrated to use half as much water as conventional processes while nearly doubling productivity: the new process gets ninety-five tons of paper from a hundred tons of wood, as compared with the fifty tons yielded by other means. These savings are realized at a price, however, since the alternative technology requires more fuel and a tenth of the usual manpower.

The nation's demand for energy is another source of stress on the water supply. However, although this demand is sure to rise substantially in the future, the amount of water consumed to generate electricity from steam is not likely to rise commensurately. In fact, steam-power plants will consume about 11 percent *less* water in the year 2000 than they did in 1975, according to the Water Resources Council's last forecast, even though the amount of water they require could be seven times greater. The huge difference between these two figures will be accounted for by improved technologies for cooling water, so that more of it can be recovered. For example, a shift away from evaporative cooling towers to non-evaporative cooling towers, in which condensed water is collected rather than released, cuts the water lost in cooling virtually to zero.

The synthetic-fuels industry, which converts coal and oil

shale into more efficient sources of energy, is based chiefly in the West. Although it has been stalled by the buyer's market in oil, its revival will place it in fierce competition for water that is already running short. A coal-gasification plant that can produce 250 million cubic feet of gas a day will require between 3,000 and 15,000 acre-feet of water a year. A coal-liquification plant that can produce 50,000 barrels of fuel a day will require between 5,000 and 10,000 acre-feet of water a year. An oil-shale plant that produces 50,000 barrels of oil a day will require between 2,000 and 9,000 acre-feet of water a year. These are small amounts of water, however, in comparison with agriculture's requirements. A coal-liquification or -gasification plant would use only enough water to irrigate between 1,000 and 5,000 acres, with harvests worth about \$250,000. If the same amount of water were used to produce synthetic fuels, it would be worth many times that sum. In 1981, Noel Gollehon and other economists at New Mexico State University studied the likely economic and social consequences of a 40 percent cut (1,245,000 acre-feet) in the water available to agriculture in Montana, Wyoming, Utah, Colorado, Arizona, and New Mexico—states for which synthetic-fuel plants have been proposed. The impact was measured in terms of the loss of income and employment directly related to agriculture and peripheral to it. The \$28 million a year and 900 jobs estimated to be lost are not trivial figures. But when these losses are weighed against the income and employment generated by industries producing the equivalent of a million barrels of oil a day, they become a good deal less disturbing.

ALTHOUGH REASONABLE PRICING IS NOT THE ONLY solution to the country's poor stewardship of water, it would have powerful ramifications. No state can be expected to refuse a dam or waterway as long as the federal government promises to foot the bill, even though such schemes may delay its coming to grips with the true sources of a shortage. No consumer in any category can be expected to use less water as long as water bills do not reflect the need. Industry cannot be expected to pay for adequate treatment as long as its failure to do so is met at most by nominal fines and more often by silence. Finally, water utilities cannot be counted on to be careful of chemical contamination, and to take steps to prevent it, as long as the EPA is too timid to insist.

The consumers of water must be made aware of its cost for any effort at conservation to succeed. Consider, for example, the aftermath of the federal Water Pollution Control Act, which provided substantial subsidies for the construction or renovation of municipal sewage systems. By 1982, grants to municipalities totaled about \$36 billion. The EPA estimates that by the year 2000, an additional \$118 billion will be needed to bring the country's sewerage systems into compliance with the act's standards. Because initially the government agreed to pay 75 percent of all

construction costs, but nothing for land or maintenance, it ensured that communities would turn to conventional plants, which are expensive to build but cheap to maintain, and which require little land. By the same token, it ensured that communities would avoid innovative systems, which typically cost little to build and relatively more to maintain, and which require large tracts of land. (Innovative sewage treatments tend to rely on nature itself; they employ liquid sewage to irrigate and fertilize crops or they decompose sewage biologically in oxidation ponds or meadow/marsh systems.) The terms of the grants have since been changed in a way that partially corrects this defect, and compels communities to pay close attention to a project's true cost. In 1985, the government's share will drop to only 55 percent for conventional treatment plants, but it will remain at 75 percent for innovative systems. The grants will still cover only the cost of construction, however, and, as a result, a community's incentive to innovate is still not obvious. According to the EPA, the new grant policy is likely to leave a shortfall of \$28 billion—or 24 percent—between the cost of the new or improved systems needed to achieve federal standards and the probable contributions of the federal government and communities to that cost.

The Reagan Administration has effectively eliminated the three federal bodies that were in a position to correct the nation's faulty planning: the Council on Environmental Quality, the Water Resources Council, and the Office of Water Resources Technology. Staffs and budgets were cut back to nearly zero. Even though the Council on Environmental Quality was composed of too many lawyers and too few scientists and engineers, it played an important role in educating the public about the threats to water and the progress toward solutions. The Water Resources Council studied on a continuous basis the adequacy of water supplies in all parts of the country. The Office of Water Resources Technology, in the Department of the Interior, was the major funding agent for studies of water's proper management. The role of all these groups was essentially critical. By consistently pointing out the flaws in how water is being managed, they made an enemy of the EPA, whose administrators did not appreciate negative evaluations of their performance. They also alienated the four agencies holding the purse strings of the government's water projects, and their chief constituencies—farmers, real-estate developers, mining companies, and so on. Last year's amendment to the rules on access to federally subsidized water is only one example of the power of these constituencies to influence the government's control of the resource.

A bill proposed by Representative Edgar, of Pennsylvania, to set up a national commission on groundwater, appears on its face to be a good first step in changing the traditional priorities of water management. Yet, although the bill's intention is worthy enough, such a commission is surely premature. Water policy is already thoroughly fragmented: the Department of the Interior and the USGS have chief jurisdiction over problems of quantity, and the EPA over problems of quality, but no agency is trying to look at the nation's water in all its aspects. Even when it was functioning, the Water Resources Council, which might have studied the interrelationships between supply and purity, and the competing demands of the states, did not do so effectively. Before a commission on groundwater is appointed, there ought to be a commission on *water*. Such a commission should seek ways to resolve the battles between East and West, and to integrate the activities of the various agencies. And it must do so without engaging in the partisan politics in which these agencies are so often embroiled. The American people are owed a careful explanation of the choices they face, both as taxpayers and as consumers of water.

Perhaps, after all, this country can prove Abel Wolman wrong, and devise a "thoughtful, logical national plan" for water. First on the agenda is to compel users to appreciate water's economic value. Prior to the energy crisis, one would not have believed that Americans could curb their appetite for oil. Ten years of rising prices have provoked amazing changes in behavior. The adjustments have not been easy, but many of the ones most feared by politicians and citizens—the charge of \$1 or more for a gallon of gas, for example—have come to pass with no real peril to the common good. Higher prices could influence water consumption just as radically, and with less trauma.

Higher prices by themselves will not untangle the snarl of competitive demands for water in regions where it is running short in absolute terms. But higher prices can reveal the true economic value of water, and make the political choices among these demands clearer. Similarly, the public health is not merely in the domain of cost-benefit analyses. Standards of water purity are ideally studied with no consciousness of the financial burdens they would impose. These burdens must then be confronted, however, and borne as part of our commitment to ourselves and to future generations. Compared with the nation's other expenses, these burdens will not be so very large. Insofar as a water crisis exists, it is a crisis of political will. If the country acts wisely, and is willing to pay the price, it can prevent politics from transforming the water crisis of the headlines into a true crisis in the natural world. □

THE LIST OF THE MOHICANS: 1. CHINGACHGOOK 2. PORTHOS? 3. UNCAS

BY ROY BLOUNT, JR.



WHEN I SIT down and make up a list of the things I will do today, I never do any of them. That is not to say I don't do anything. I may compose an operetta. But I don't do any of the things on the list.

And what am I going to do with an operetta? I don't know any violinists. Violinists may not be the first thing that springs to mind in connection with an operetta, but someone has to think of them at some point. Now that I have an operetta, I've got to sit down and make a list:

1. See about staging of operetta
 - a. Union difficulties?
 - b. Real horses?
 - (1) Check legality

Lists generate sublists. And now that I have a 1.b.(1), I have to have a 1.b.(2). I learned this in school. I may not need a 1.b.(2), but I have to have one. I also have to have a 2. Now who is in charge, me or the list?

That is the question. When I am making a list, I feel dynamic, goal-oriented, ahead of the game. When the list is finished and I am looking at it, the power has shifted. I have to do what the list says.

But even while making the list, I am subject to certain laws:

1. Plurality
 - a. You can't have a list that says just "1. Be Thyself"
 - b. You have to have a list that says
 - (1) For instance, "1. Be Thyself"
 - (2) And something else, like "2. Think About It"
 - c. And then you are in trouble
 - (1) Because how can you be *being* something—thyself, a ground squirrel, it doesn't matter what—while you are thinking about being it?
 - (2) And how can you not think about it when you see—inevitably, your eyes steal ahead—that

the next item is "Think About It"?

2. Impersonality

- a. You've got problems if you start using personal pronouns
- b. Should it be
 - (1) "Be Thyself," or
 - (2) "Be Myself"
 - (a) If (1), then who is speaking?
 - (b) If (2), then here I am, a grown man, saying "Be Myself" to myself. It's embarrassing

III. Roman Numerals

- A. Come to think of it, it is a good idea to start off with Roman numerals. Otherwise, before you know it you are down to 1.a.(1)(a)

1. Which is scraping bottom
2. Whereas I.A.1.a. leaves room for two more levels
 - a. I.A.1.a.(1)
 - b. I.A.1.a.(1)(a)

- B. On the other hand, no one has ever been able to follow a list of items headed by Roman numerals

1. It goes back to the Ten Commandments
2. And as soon as you see "I," even when it means "Roman numeral one," you tend to think about yourself. The "I." And what a strange remove it is, that takes us to this notion of "the 'I.'" It is bad enough when someone named, say, Billy, goes around referring to himself as "Billy." If he should start talking about "the 'Billy'"—well, here we go down the rabbit hole. It's like those insurance companies now that will sell you a policy to cover (supposedly) your legal expenses in the event that you have to sue your insurance company for not paying off. Did you know that after a big high-rise luxury resort casino-hotel burns down and hundreds die, the hotel can insure itself *retroactively*? You or I couldn't, but a big outfit like that can. Somehow the hotel people

and the insurance people all make out

IV. Everything has to be parallel

"Oh, you're getting way off into outlining," some may say. "Lists, kept in their place, are a servant to man." Uhm-hm. It is always a mistake to condescend to a list. You look at a list and say, "Well, now, this is a handy little prioritizational device. I should be able to knock all these items off bing bing bing." The list goes through a moment of quiet fusion and says, "Okay. Come on." Then try striking anything off it.

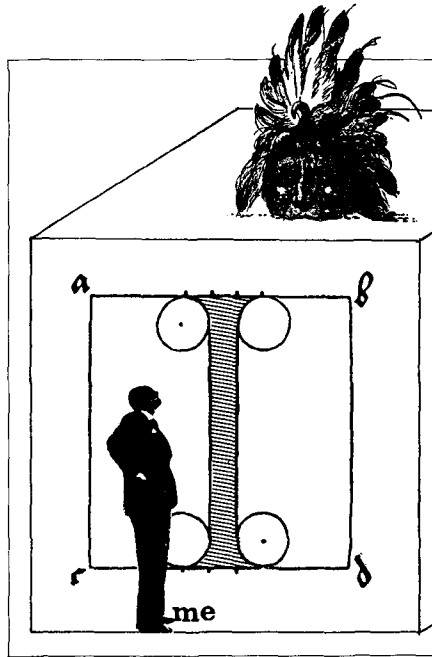
You never take the first item first, obviously. That would be like accepting the Russians' first offer in a disarmament talk: "Let me see if I have this straight. We transfer to you all of our military might except the generals and admirals, whom we get to keep, and you commit yourselves to an unspecified period of 'all due restraint.' Okay, what the hell."

But even the second item is not something you want to be drawn into precipitously. You look up and down the list and feel as though you are standing on one side of a stream, trying to decide which rock to put your foot on first. None of them look good.

- I. It may very well be that a given item is not *right* for you when you come to it on a list
- II. It may very well be that in a free society, a given item is *by definition* not right for you when you come to it on a list

Now it is time for lunch. As a rule, I have stopped drinking at lunch. It isn't fashionable to drink at lunch these days. But it used to be. I remember, years ago, when I first got a job in New York City. An old hand took me to lunch at a Chinese restaurant, treated himself to eight martinis, and fell—in stages, as if by peristalsis—all the way down a circular staircase that was ornamented to look like a dragon.

- I. Some good non-alcoholic lunch beverages
 - A. Iced tea
 - B. Alka-Seltzer
 - C. Bireley's Chocolate Drink
 1. If lunch is a peanut-butter log
 2. And not many places today have peanut-butter logs
 3. In fact, I don't remember the last time I saw
 - a. A peanut-butter log
 - b. A Bireley's Chocolate Drink



II. Some bad non-alcoholic lunch beverages

- A. Virgin margarita
- B. Herbal old-fashioned
- C. Bireley's Chocolate Drink
 1. Now that I think about it
 2. When I was a kid it was good, though
 - a. So was Nehi strawberry
 - b. And Nugrape
 - (1) I don't think anything has ever struck me as prettier-colored than Nugrape foam back then
 - (2) Of course I was a child, and my tastes were unformed
 - (3) But in college English, when I came upon "the blushful Hippocrene,/ With beaded bubbles winking at the brim,/ And purple-stained mouth," it brought Nugrape back

Even when I don't drink, however, for a couple of hours after lunch I feel listless. Before long it is nearly time to relax and look back over the events of the day; and there haven't been any yet.

I scan the list for a vulnerable spot. Sure, I could tack on something easy, like "Memorize new apartment number." But when you've seen as many digits come and go as I have, what's so easy about that? Anyway, if I tacked it onto a list, I wouldn't do it.

While I was not doing any of the things on my list for today, I came across, in some of my papers, the following list, "Gifts to Get for People," which dates back to December, 1981:

1. *The Book of Lists*—Vaughn
2. *The Book of Lists II*—Beryl
3. *The Book of Sports Lists*—Artie
4. *The Book of Fish Lists*—Carl and Dot
5. *Listlust*—Hope
6. *Lost Lists of the Incas*—Oola
7. *The List Book Booklist*—Franz

I'll tell you something. That list did not give one iota. Hey, Christmas is not a line-item affair. Christmas should be cornucopious. Higgledy-piggledy down in the stocking and under the tree. You wouldn't want to buy your turkey by the inch, would you? You want partridges in pear trees untold.

I remember when a cold-drink machine was a big, rusting, red-metal box with a slide-open door in the top. You'd reach down into that well of melting ice and variously shaped cold bottles randomly heaped, and you'd swush around heavily for a while and come up with a Nugrape. A Grapette. A Sundrop. An Orange Crush, with its pebbly, thick-walled bottle the color of iodine. A Bireley's Chocolate Drink. Bireley's put out an orange, too. A Nehi black cherry. Or it might be something entirely new, which you'd never encountered before. Back then, TV marketing strategy was less advanced, so if there was a new soft drink out, you might not have seen a representation of it before you actually pulled one up out of the ice and cold rivulets and ice flecks ran down it onto your pulse and forearm.

Today a cold-drink machine is a list of buttons. Push one, and a can comes down a chute.

Remember back even further—frankly, to the womb? How your day developed? It was all very structured, very symmetrical, but none of this by-the-numbers. You'd be reflecting, "Hmmmnn," and "I've got a heartbeat," and "I'm not going to be a fish." But it wasn't

1. "Hmmmnn"
2. "I've got a heartbeat"
3. "I'm not going to be a fish"

It was dawns overlapping. You didn't know *what* you were going to be. Even if you had known, it wasn't anything you'd ever seen.

But you could sense the thread. And it wasn't linear. It was more like the thread on a screw, only pre-industrial; something that turned to go forward. I'm holding out for a helical list. With a bubbling, grape-colored head. □

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BOOKS

FREE TO ARGUE

BY ROBERT LEKACHMAN

BRIGHT PROMISES, DISMAL PERFORMANCE
by Milton Friedman. Harcourt Brace Jovanovich, \$4.95.ECONOMICS FROM THE HEART
by Paul Samuelson. Harcourt Brace Jovanovich, \$4.95.THE TRUTH ABOUT SUPPLY-SIDE ECONOMICS
by Michael K. Evans. Basic Books, \$17.95.

WHEN, FOR REASONS that now elude me, I enrolled in an introductory economics class, the year was 1939, unemployment had simmered down to a mere 17 percent from its horrifying 25 percent peak in 1933, and the subject itself, though a trifle arid by contrast to the great books featured in the Columbia College curriculum, posed neither unusual difficulty nor confusing uncertainty about basic principles. In those days, standard economics coincided with price theory—the analysis, as one influential definition put it, of the allocation of scarce resources among numerous alternative ends. On the fringes were Marxists, followers of Thorstein Veblen, and a lonely partisan or two of Henry George and the single tax. In 1939, neither economists nor their students were aware that Keynes had transformed economics with the publication in 1936 of *The General Theory of Employment, Interest and Money*. World War II ended before Paul Samuelson popularized Keynes's message in his enormously influential textbook. My text wasted little space on unemployment and none at all on the themes of Keynesian macroeconomics—the determination of national income, the behavior of investors, and the responses of consumers to alterations in their incomes.

Since those naive days, economics has become more varied and enormously more technical. Marxists are still around, are even in critical mass at the University of Massachusetts and New York's New School for Social Research. John Kenneth Galbraith flourishes in the tradition of Veblenian institutionalism, which emphasizes property rights and the actual distribution of political and economic power. Newer supply-siders clamor for attention. Robert Reich has made a strong case for a distinctive version of national economic planning that

emphasizes gentle federal guidance of the private economy in the interests of progressive industrial policy.

Such reflections encourage evaluation of those veteran warriors, Nobel laureates, *Newsweek* columnists, and practiced controversialists Milton Friedman and Paul Samuelson. Truth to tell, both Friedman's *Bright Promises, Dismal Performance* and Samuelson's *Economics from the Heart* are non-books. They are thematically arranged columns from *Newsweek*, supplemented for Friedman by a long 1973 *Playboy* interview and two or three shorter items. Nothing dates quite as conclusively as yesterday's newspaper or last week's news-magazine. Investment tips for 1976 lack the titillation of avarice that is conveyed by sage advice for the rest of 1983. Friedman's blasts against federal bailout of New York City and Chrysler read as outbursts of ill temper in light of current fiscal stability in the Big Apple and actual profits reported by Chrysler. And does anyone still care how well Gerald Ford conducted economic policy? All the same, I can in good conscience recommend both collections to judicious readers who promise to skip and skim, for the sufficient reason that between them, Friedman and Samuelson define the limits of mainstream economics with fervor and precision.

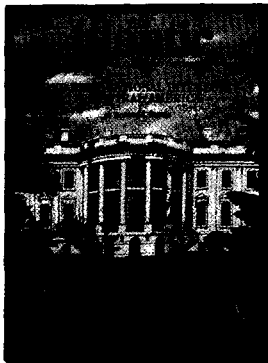
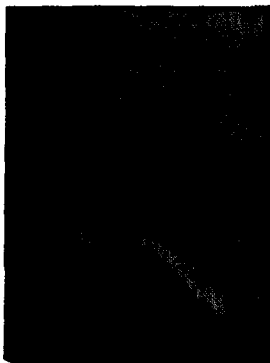
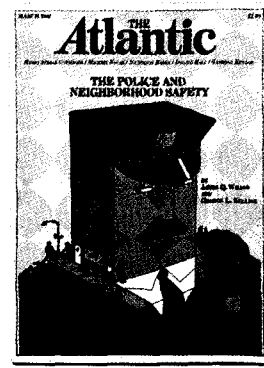
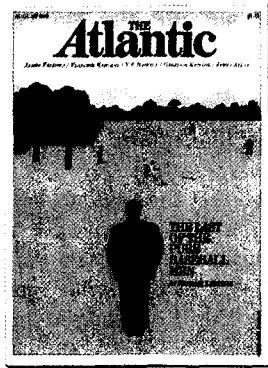
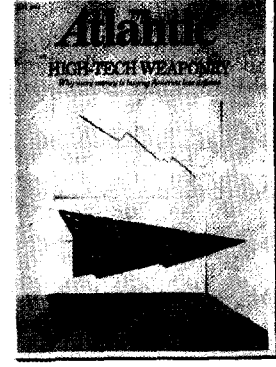
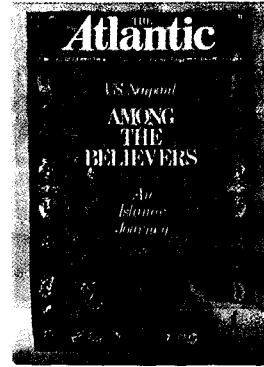
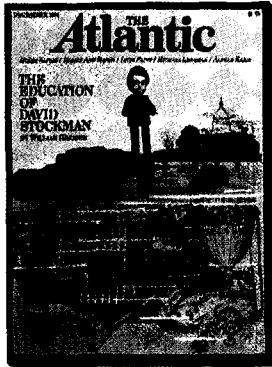
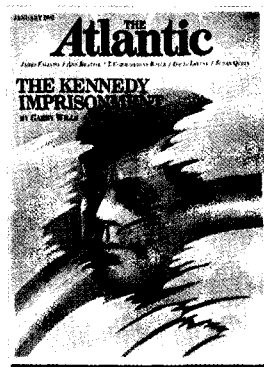
AS THE WORLD knows from his television series *Free to Choose* and the best-selling book of the same name that accompanied it, Milton Friedman is a fine specimen of a hedgehog, half of Isaiah Berlin's famous division of intellectuals in his essay "The Hedgehog and the Fox." He knows one big thing—free enterprise works and government doesn't. For decades, he has deployed endless virtuosity in the application of this article of faith to contemporary dilemmas.

Among economists, Friedman is possibly most famous as the re-inventor of monetarism, which he popularizes in numerous essays in this volume. Monetarists aver not only that money matters but that it matters more than anything else in the creation of sound public policy toward the economy. For monetarists, the link is strong between the supply of money (M_1 , M_2 , or some equally mysterious subscript) and prices, economic activity, and employment. Inflation and unemployment derive from the misguided attempts of the Federal Reserve to manipulate interest rates and investment. All of us will fare better, Friedman says, if the Fed obeys a rule: increase money at the growth rate of the gross national product—say, 3 percent.

Friedman's monetarism fits snugly within the framework of the current Administration's reiterated confidence in the beneficence of private action and individual self-interest. As an enthusiast for individual freedom, Friedman supports school vouchers on the familiar grounds that they maximize parental choice, avoid the compulsions of public education, and, not least important, promote vigorous competition between public and private schools. Friedman is equally consistent on national defense. If in a dangerous world we must put in uniform 2 or 3 million men and women, let them be volunteers rather than conscripts. Potential volunteers, like other rational souls, respond to self-interest. They sign their articles of indenture only when pay and perquisites exceed available alternatives.

Friedman's advocacy of maximum freedom of choice extends to the poor. Why should caseworkers tell welfare clients how to budget their grants? Friedman's substitute, a favorite among his peers, is still another of his novelties—the negative income tax. Friedman would sweep away food stamps, housing allowances, Medicaid, and clothing grants, and offer in their stead cash grants that would diminish and ultimately vanish as earnings increase. For a family of four, the poverty line is about \$10,000. If such a family has no other income, Friedman proposes to offer it a \$5,000 cash grant. That grant would shrink \$1 for each \$2 of paid work. If an adult garnered \$2,000 from casual labor in the course of a year, his income would rise to \$6,000—\$2,000 plus a reduced grant of \$4,000. The simple arithmetic supplements wages with cash grants un-

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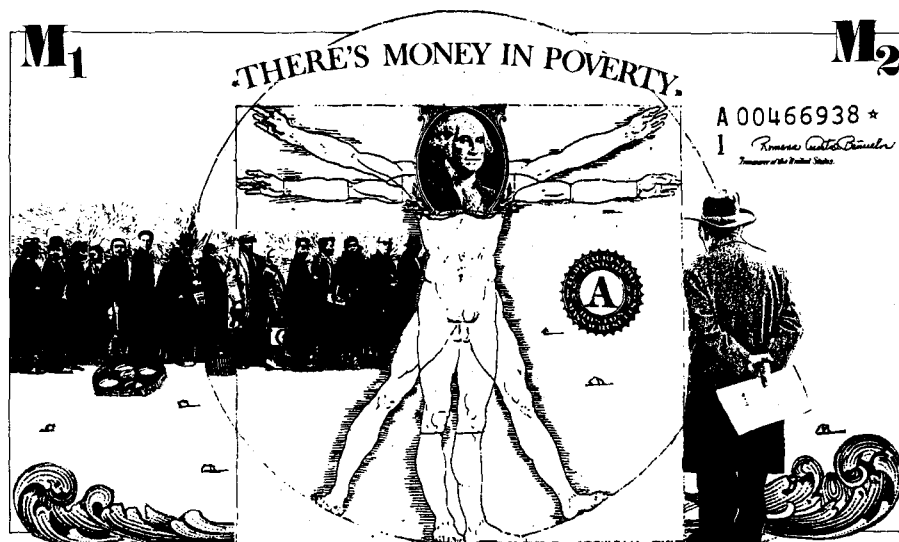
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til wages reach \$10,000. Thus work incentives are preserved, the community displays decent regard for the needy, and the poor, like the rest of us, are left in peace to choose just how they want to spend their meager income.

Friedman's professional and public influence has been enormous. Although monetarism has fallen upon troubled times—because money gets harder and harder to define, and because monetarist forecasts have proved no more accurate than prophecies based on Keynes, intuition, comic strips, or astrology—a great many economists call themselves monetarists. For nearly three years, until last summer, Paul Volcker and his Federal Reserve colleagues conducted a monetarist experiment, during which they explicitly focused policy on the supply of money instead of on interest rates. The major consequence of that experiment—the deepest recession since the 1930s—has given fainthearted monetarists pause.

Friedman, a free-market radical, dislikes Social Security because, in his view, it is both coercive and a fraud. The young, he argues, would fare better in old age if they were allowed to make their own retirement plans. Why should a young worker whose relatives typically die young be compelled to contribute toward a retirement fund that, on the odds, he or she will not survive to enjoy? New Deal and Great Society social programs, he says, distribute benefits mostly to the middle class and the rich. As

Robert Lekachman teaches economics at the Lehman College campus of the City University of New York. He is the author of, among other works, The Age of Keynes and the recent Greed Is Not Enough: Reaganomics.

the cynical old saying runs, there's money in poverty. It accrues in good part to welfare administrators and other meddling bureaucrats.

PAUL SAMUELSON IS an eminent fox. Again according to Isaiah Berlin, foxes know many things. Although he is more aware than Friedman of the imperfections of competition, Samuelson respects the power of markets to satisfy consumer preferences, direct the flow of capital and other resources to productive uses, and distribute income with occasional approximations of equity. At the same time, he keeps the Keynesian faith. Much like Keynes, he worries about capitalism's tendency to subside into deep and prolonged recession. Like Keynes, he considers it a legitimate and urgent obligation of government to create jobs when the private sector falters. He shares Keynes's belief that job creation is technically feasible.

Recession is an affliction of deficient total demand. If consumers and investors spend too little to employ willing workers, let government fill the gap, preferably by providing useful work. But, as Keynes argued in a moment of impatience, even useless work has benign effects when millions are unemployed: "If the Treasury were to fill old bottles with banknotes, bury them at suitable depths in disused coal mines which are then filled up to the surface with town rubbish, and leave it to private enterprise on well-tried principles of *laissez-faire* to dig the notes up again (the rights to do so being obtained, of course, by tendering for leases of the note-bearing territory), there need be no more unemployment and, with the help of the repercussions, the real income of

the community, and its capital wealth also, would probably become a good deal greater than it actually is."

Samuelson seldom hesitates to enlist government on the side of the vulnerable. For him, modern economies are mixtures of public and private activity. Government protects citizens against foreign enemies and, with equal propriety, against domestic foes, such as unemployment, indigent old age, and disabling illness. He knows something more—that individual success is frequently the product of luck rather than of merit.

In Samuelson's eyes, then, there is nothing wrong and much right in taxing the rich and lucky to mitigate the hardships of the poor and unlucky. Samuelson quotes approvingly Justice Oliver Wendell Holmes's aphorism "Taxes are what we pay for civilized society." A democratic, responsive government empowers the weak and checks the excesses of the strong. For Friedman, government is rarely benign and almost invariably coercive. Arguments for and against both judgments are available in abundance in these two collections.

A NOTE, FINALLY, ON supply-side doctrine. At the beginning of the Reagan era, supply-siders promised an immediate boom stimulated by sharp tax cuts guaranteed to unleash unheard-of prodigies of saving and investment. This boom was certain to generate so much additional tax revenue that the federal budget would move into balance by 1984, even after substantial extra helpings for the Pentagon.

To put the outcome quietly, it didn't happen. Investors and rich individuals gratefully accepted new tax favors, but saved no more and actually curtailed plans to construct new factories and install new machines. By April of 1981, David Stockman confided growing skepticism about the workability of Reaganomics. By September of that year, Treasury Secretary Donald Regan, in happier times head man at Merrill Lynch, vented this *cri de coeur*: "The Administration has done its job. It has provided just what American industry said it needed to transform our economy. . . . Yet I must stand here today and ask: Where is the business response? . . . Where are the expansion plans? It's like dropping a coin down a well—all I'm hearing is a hollow clink."

Undaunted, Michael K. Evans makes

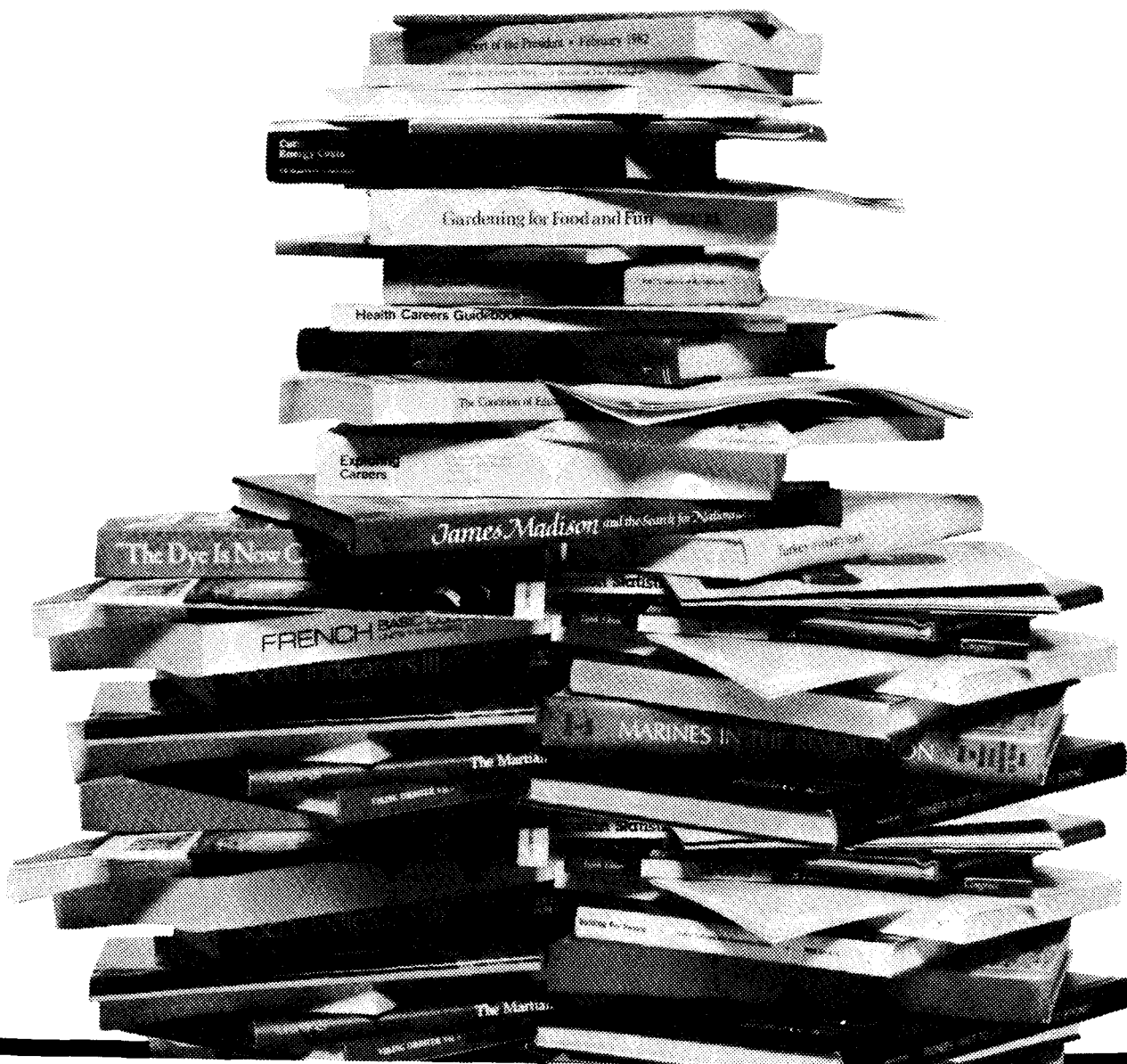
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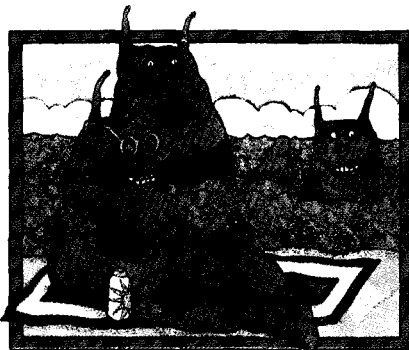
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a full-dress defense of supply-side theory in *The Truth About Supply-Side Economics*. Though his exposition is cluttered with too many of the numbers and charts that are the econometrician's stock in trade, the argument is not difficult to follow. To begin with, the Reagan team misunderstood and therefore misapplied supply-side theory. They bet their political chips on four myths: that interest rates would decline obediently as soon as the Reagan program was announced; that the tight-money stance of the Federal Reserve could be reconciled with the fiscal ease of huge tax cuts; that generous tax favors to business would increase investment immediately; that the federal accounts really would balance in 1984.

Nothing went according to plan. Brooding over growing federal deficits, the financial community refused to shave the inflation premiums they attached to interest rates on new loans. Even if they had been inclined to do so, Federal Reserve policies signaled high rather than low interest charges. Investors postponed new capital commitments, because even in January of 1981, factories were operating much below capacity. By July, the economy had sunk into renewed recession. Each additional one percent of unemployment costs the Treasury between \$25 and \$30 billion in lost tax revenues and in larger payments to the unemployed. In January of 1981, when Mr. Reagan was inaugurated, unemployment was 7.4 percent. It is now running about three percentage points higher, which translates into an additional annual loss of \$75 to \$90 billion—somewhat less than half the annual national deficit.

With friends like Evans, the Reagan Administration has no need of enemies like me. The President, according to Evans, should never have promised a boom without an intervening recession. His pledge for the 1984 budget was singularly ill advised. He should have counseled his constituents to look beyond the valley of recession to the high country of prosperity. Evans persists in saying that supply-side theory is valid when applied at the right time. He interprets the 1964 Kennedy-Johnson tax cut as a successful supply-side venture. It did stimulate saving, investment, and faster growth. Evans advocates policies far more redistributionist (in an egalitarian direction) than the Kennedy-Johnson tax design or even the 1981 Reagan reductions. If the objective is maximum encourage-

ment of investment and saving, tax benefits should flow almost entirely to the rich. These are the people who save and invest. Our economic crisis is defined by rates of investment and saving lower than those of any rival except Great Britain, whose economy is not one to emulate.

Reagan blew it. In our disordered economy, "the government had to demonstrate that it could reduce the deficit and lower inflation; then the productivity-increasing tax and spending cuts could have proceeded apace." It makes Evans sad and me quite happy that "the virtues of supply-side economics will now remain buried in the rubble for many years." Alas for our beloved country: "The best chance for the economy to recover has gone by the boards, with the result that, without radical restructuring of fiscal policy, the United States will gradually follow its demise as the leading military power into the position of a second-rate economic power as well."

There, friends, you have it. Feel entirely free to choose among Friedman's individualism, Samuelson's judicious Keynesian remedies, Evans's supply-side holy grail, and, for that matter, none of the above. Economics, like life, is a good deal more confusing in 1983 than it was in 1939. □

TREKKING TO THE VOID

BY MARTIN AMIS

A JOURNEY IN LADAKH
by Andrew Harvey.
Houghton Mifflin, \$13.95.



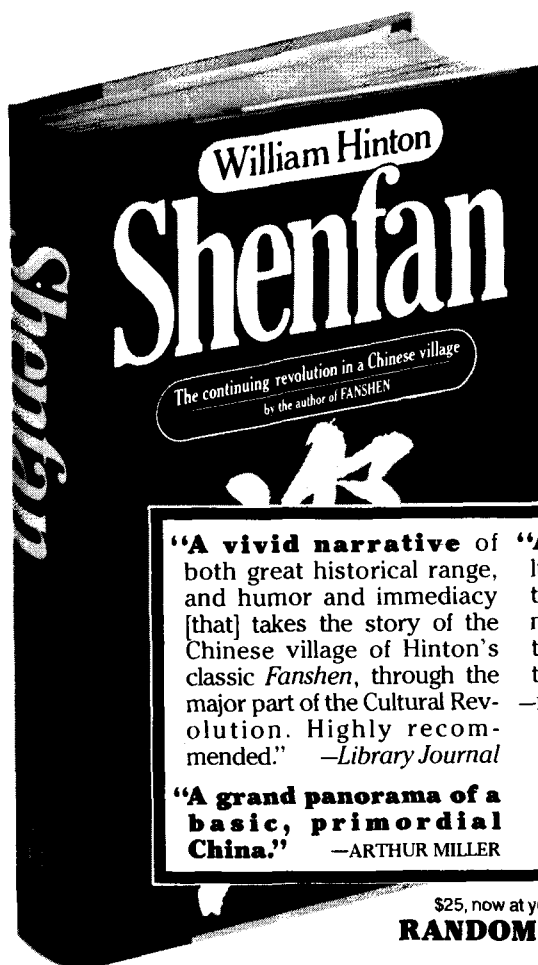
REVIEWING JOAN DIDION in the London *Sunday Times*, Paul Theroux remarked that *Salvador* was a good book about "being nervous" but not much of an account of El Salvador. Travel writing remains a predominantly European genre—a genre that the New World has yet to get around to. Explanations and exceptions immediately present themselves. In *To Jerusalem and Back*, Saul Bellow pointed out that America is more like a world than a country; and perhaps

Martin Amis lives in London. His latest novel is *Other People: A Mystery Story*.

this is why the best American travel writing is almost invariably domestic. In England, a new generation of talented tourists has recently emerged: we have Bruce Chatwin and Jonathan Raban, and V. S. and Shiva Naipaul by adoption. In America, there is no such tradition to be maintained. (You have Theroux, true, but he lives with us in London now.) The embarrassing answer may be that the England-based traveler is emboldened by the vestiges of an imperial confidence. We aren't nervous: we've done all this before. Combining intrepidity with a helpful boorishness, the Brit strides out into the world and brings back the story, dead or alive.

There is one road, however, that even the cultural colonist treads warily. This is the Way, or the Path—the "hippie trail" to the Enlightenment centers and Revelation strongholds of the East. The literature of these journeys has dwindled in modern times: the travelers fall prey to dysentery or dope, or forget how to write, or never come back, or return with an Understanding too ineffable for syntax. The Eastern road is a humbling one; the trekker treks on tiptoe, or on all fours, cruelly burdened by his knapsack of Western guilt and self-loathing; he longs to prostrate himself before the first smiling guru who will redeem and legitimize him, and kiss away his confusion and his cares. You begin Andrew Harvey's book feeling like an averagely soiled and venal Westerner. You finish it in far worse shape. I don't know whether the reader will want to retrace the steps of Harvey's quest, but he will certainly want to check into a health farm for a couple of weeks. At the very least, the book reminds all of us out here in the West, as we sweat it out in our mangled cityscapes, that it might be time to cut down on the smoking and the drinking, the adult videos and the Big Macs.

As its title half-suggests, *A Journey in Ladakh* describes a spiritual odyssey. Yet the journey begins conventionally enough, in all respects. Enervated by the "bitterness and solitude" of his twenties, harassed by "the complex civilised rones and melancholies of Europe," Harvey, a talented and tempestuous Oxford academic, makes his long-anticipated pilgrimage to Ladakh, in northern India, "one of the last places on earth . . . where a Tibetan Buddhist society can be experienced." He sets off from Delhi, pondering a saying from the Dhammapadam: "By oneself the evil is done, by



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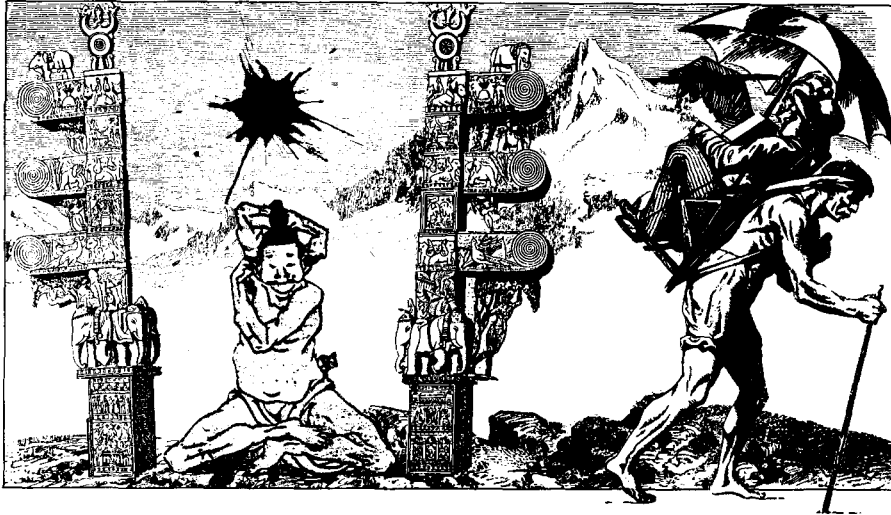
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oneself the evil is undone, no one can purify another." An experienced traveler, Harvey is nonetheless struck by the "splendour and majesty" of the mountains and the "age and uncomfortable-ness" of the buses. In Leh, he acquires the usual gushing guide, Ahmed. "You name it, I am knowing it very fully. This is truth, sir."

Not yet searching for Truth, Harvey is free to write rapturously and hungrily about the crispness of the Ladakhi landscapes, the gentleness and simplicity of the people. Ladakh, it transpires, is a land that time forgot—or a land that time is just beginning to recall. It is an endangered culture, threatened by the twentieth century and by its own prelapsarian innocence. But, then, Harvey sounds innocent too, in his yearning generosity, and the reader isn't sure what goes unseen while the "silent splendour" proceeds to "rinse" the author's mind "of everything but calm." "I have seen very little cruelty," Harvey is assured by an American psychologist. "Once I saw a child tormenting a dog. That's about all—in three years." Ladakhis are taught that every living thing has been their mother in a previous incarnation. There are no unhappy love songs in Ladakhi folk culture, and there is no concept of tragedy in Ladakhi literature. Harvey meets with much kindness, hospitality, and good humor—a teasing gaiety. Right up to the highest levels of Enlightenment, he finds that the (Tibetan) Buddhist emphasis is on pleasure rather than asceticism. "Don't worry," a monk tells him, as they share a flask of chang. "Padma-sambhava himself drank. A great deal."

Meanwhile, as Harvey encounters the familiar crew of Western searchers and finders, seekers and seers, he eventually

notes with regret that there is also "ugliness" in Ladakh, to which he devotes a brief paragraph. This is the first suggestion that Harvey is visiting a deprived area in one of the poorest countries on earth. There are, for example, "mangy flea-ridden dogs nosing for food in the gutters." My first thought, on reading this, was that Harvey hadn't really looked at the dogs—"mangy" and "flea-ridden" are received, automatic adjectives; and what else do pariah dogs do but nose for food in gutters? (Indian dogs are in fact highly distinctive creatures: they look like abruptly promoted rats, bemused by their sudden elevation, and pining for a quiet return to the rodent kingdom.) Harvey reminds us a dozen pages later that he spent much of his childhood in India; and we must again acknowledge how this fact, so little emphasized in the text, crucially slants *A Journey in Ladakh*.

Harvey's Indian childhood provides him with all kinds of vaccinations and culture-shock absorbers denied to that mental traveler, the reader. In *An Area of Darkness*, V. S. Naipaul speaks of the Indian facility for "ignoring the obvious"—for ignoring the suffering, the excrement, and the stench that initially stupefy the Westerner. Indians do not see what we see. Nor does Harvey. Selective blindness is the necessary mysticism of India; it is what Kipling is referring to when he talks of the "ecstatic" quality of the ordinary, the urban, the unknown Indian, whose life is variegated and sustained by a fabric of religious consolations. Harvey has something of this otherworldliness. To an extent that he doesn't sufficiently discuss or allow for, he is not the pilgrim so much as the prodigal son.

Halfway through the book, however, Harvey has yet to set off down the Path. He has had many rambles, on foot and in conversation. He tells of his troubling dreams and his husky crying jags up in the mountains. But his moments of uplift are not readily distinguishable from mere pantheistic euphoria. The extreme, cleansing beauty of Ladakh is summoned in these pages not by description but by Harvey's detailed reports on the joy these landscapes give him. Even the most blemished readers will feel that they could improve their spirituality without really trying if they spent more time in Ladakh and less time in, say, Piccadilly Circus. At this point, though, and quite inadvertently, Harvey stumbles across his guru, his Rinpoche (pronounced *Rinpochoy*), and from here on *A Journey in Ladakh* follows Harvey's tutorials at the feet of the great man.

The book gets less enjoyable around now but much more original, as Harvey's own temperament becomes its dramatic core. Throughout, Harvey presents himself openly, unpointedly, as if the book were simply a diary that had somehow fallen into the hands of the publisher. He comes across as eager, un-self-sparing, perhaps rather helpless in his pain and narrow in his humor, charged with tearing desire; and the reader feels protective of his fragile excitability.

Thuksey Rinpoche has none of the lispig hucksterism of the Bhagwan Rajneesh or the Maharishi. He emerges as endearing and likable, and convincingly holy and wise. He got that way by the following means: abstinence, prayer, meditation, learning, and spending ten years alone in a cave. Spending ten years alone in a cave is obviously the hard bit. Your only chance of skipping this stage is by being an Incarnation right from the start, like Drukchen Rinpoche, another voluble genius—a spiritual princeling at twenty, happy in his "simple monk's robe" and his "small bare room." Harvey's induction begins. Time is short, but he manages to make the big breakthrough on his very last night, up there with the old Rinpoche: having experienced Emptiness, his first glimpse of the Void, Harvey is finally led into the Way of Compassion.

Here the reader is in the position of anyone buttonholed by a convert's account of religious revelation. You are obliged to ask yourself, however reluctantly, Why is he telling me this? Harvey

The science of ifs and buts

In a country where economists often disagree, a taxpayer can hardly be blamed if, from time to time, he's tempted to consult a fortune-teller.

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While that paragraph may elicit a knowing nod from a cynic, most thoughtful people know better, if only because they realize that economic forecasting is even more perilous than predicting the weather.

In the words of an American economist, Milton Friedman, economics is no more and no less than "a body of tentatively accepted generalizations...that can be used to predict the consequences of changes in circumstances."

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certainly fails to commemorate or enshrine the moment with any new intensity in his writing. There isn't much difference in energy, or indeed in content, between Harvey's exaltation when he alights from the bus—

... each winding dark stream, each small shrub clawing the sides of the road, each bird, seemed to be so full of its own essence that it hovered on the brink of dissolution, so brimming with energy that I feared often it could not survive itself. . . .

—on page fifteen, and his climactic trance of "Sunyata," thirty pages from the end:

Each object looked at once startlingly, intensely real—and completely fabricated. . . . Even the Rinpoche looked at once imposing and a doll. . . . The fruit in front of him seemed at once solid and so fragile that a breath could blow it away or break it.

There are other things that trouble the reader, the Westerner marooned in his own inner city. Approximately half the book is in the form of dialogue, or distributed monologue, with Harvey allowing the munshis and mystics their full say. Now, it is hard to imagine Harvey asking the Rinpoche, "Will you teach me the meditation on Avalokiteshvara?" with one finger tensed on the REC button of a Sony. Jam Yang, a Ladakhi acquaintance, mentions Harvey's "big black notebooks, full of illegible writing." But when did all the transcription take place? Is Harvey also blessed with Perfect Recall? The questions become more pressing toward the end, by which point Harvey is too blissed out to do much more than bask in the Rinpoche's gaze. And yet the jotting got done somehow, pages of complicated and technical instruction, all in immaculate English.

One has always understood, furthermore, that an initiation such as Harvey underwent is as non-transferable as a mantra. Yet Harvey holds nothing back. Indeed, he would seem to have written a book about it all. Isn't it "materialist," or at any rate paradoxical, to popularize and profit from an experience in which the author triumphantly turns his back on worldly desire? Even if it should transpire that the royalties are going straight to a Ladakhi picture-restoring fund, these anxieties would still hold, and Harvey ought to have helped purge them.

In his Western incarnation, Harvey is a poet and a teacher. His poetry has always erred on the side of precocity and dazzle, but *A Journey in Ladakh*, as an act of writing, is a subdued performance. This is deliberate: early on, Harvey abjures the temptation "to fling names at things" and learns to treasure "the gift of silence." One of his key questions to the Rinpoche involves the conflict between spirituality and art. If spirituality grows, doesn't art begin to end? The Rinpoche's riposte is a good one. He concludes:

With time and sincerity you will discover a way to work and write that does not harm you spiritually, that does not tempt you to vanity, that is the deepest expression of your spirituality. You will find a voice that is not your voice only, but the voice of Reality itself, and free from all delusion and stain of personality.

Harvey made his journey in 1981. He doesn't tell us whether his illuminations survived re-entry. He doesn't tell us—he probably doesn't yet know—whether his art can now prosper in the weak and wanton West, where the gods are Talent and Hard Work and Immersion in the Consensus Reality. Religion used to be a part of that consensus. It isn't any longer, and Harvey will have to choose which gods to honor. *A Journey in Ladakh* is not the kind of book in which the reader follows the free play of perception and inquiry; it doesn't seek inclusion in the corner of art that travel writing inhabits. It is bleached by exposure to a higher light. □

ART AND ARDOR

BY JAMES ATLAS

TURGENEV'S LETTERS
edited by A. V. Knowles.
Scribner's, \$30.00.



NOVELISTS TEND TO make self-conscious correspondents, offering different versions of themselves to different recipients, but Ivan Turgenev addressed everyone in the same genial melancholy voice, whether it was Leo Tolstoy or the peasants on his estate "His whole aspect and temperament was

of a larger and manlier kind than I have ever yet encountered in a scribbler," Henry James reported to his aunt, and those qualities shine forth in A. V. Knowles's new edition of Turgenev's letters. Turgenev was attacked by Tolstoy and Dostoevsky for his liberal humanist views, condemned for decades to a frustrating liaison with a married woman, and exiled to his estate by the capricious edicts of the tsar, but he rarely lost the benign, rough-edged equanimity that prompted the Goncourt brothers to describe him as "*le doux géant, l'aimable barbare*"—the gentle giant, the amiable barbarian.

Turgenev spent most of his life abroad, but Russia was his subject, and his work was so topical that he could hardly have avoided controversy. His first novel, *Rudin*, offended the liberal intelligentsia, which saw in Turgenev's portrait of the voluble idealist Rudin a satire on its own revolutionary aspirations. From then on he found himself caught in the cross fire between the progressives of his generation and a feudal autocracy suspicious of his association with some of the very figures he satirized. "I am a writer and nothing else. Everything in my life is expressed in my works—and I should be judged by them," Turgenev protested to Alexander II; and he made the same argument to Mikhail Bakunin, the primary model for Rudin, and Alexander Herzen, whose heated calls for revolution were echoed by Bazarov in *Fathers and Sons*. But he had strong opinions about this new generation, however vociferously he declared his neutrality. Turgenev considered the political strife of nineteenth-century Russia more a matter of fathers and sons, rebellious youth and repressive authority, than of conflicting ideologies.

For all the Russianness of his novels, with their dachas and peasants, their interminable winters and leisurely philosophical conversations, Turgenev was happier in Paris and Baden-Baden than he was at Spasskoye, his country estate, and he returned home with increasing reluctance once he had established himself in Paris, where he formed an ill-defined *ménage à trois* with the Parisian singer Pauline Viardot and her tolerant older husband. He found Russia primitive, ignorant, a despotic, barbarous society. His letters are filled with cries of boredom and gloomy denunciations of his native land. "What a sight Russia is

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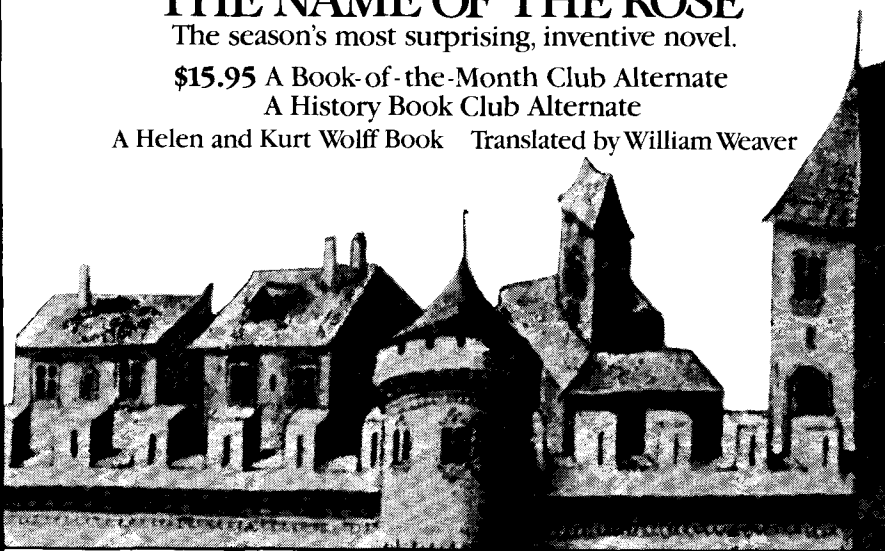
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at the moment, that Russia which everyone is convinced is such a rich land!" he lamented after a visit home in 1868:

The roofs are *all* full of holes, the fences are falling down, nowhere is there a new building to be seen—with the exception of taverns. The horses and cattle are dying and the people hollow-cheeked. Even three coachmen could hardly carry my trunk! Clouds of dust are everywhere, everything is on fire all around Petersburg—the forests, the houses, *the very land* itself. And the people—sleeping, stretched out flat on their stomachs. Debility, inertia, poverty, everything in an awful state. The picture is not a happy one—but it's *accurate*.

Yet his very distance from Russia enabled Turgenev to cultivate his nostal-

abroad made Turgenev more generous toward his homeland than those fervent Slavophiles Tolstoy and Dostoevsky, who fulminated against Turgenev's attachment to Europe even though they rarely depicted Russia with as much sympathy as he did.

TURGENEV EMERGES in these letters as a good-natured, modest, somewhat melancholic figure, warm, brooding, sentimental, prematurely disillusioned, patient with his critics yet rather brutal in his own criticism: "I liked your novel less than your previous writings." "*The Crooked Trees* should not be published because—if you will excuse the bluntness of expression—a more ugly or, to be more accurate, a more disfigured work I have yet to come across."

Not even Tolstoy was exempt from

Will I be able to draw in clear and simple lines? I don't know the answer, and I never shall until I try, but, believe me, you'll either hear something new from me—or nothing ever again.

Eight years later, by then a famous novelist, he was still wondering, "Am I really a writer?" He showed his work to friends before he published it, revised according to their advice, and never exalted his vocation: "In my opinion 'a writer' is a name, or a definition of one's activities, just like a 'bootmaker' or a 'pastry-cook.'"

Still, literature afforded satisfactions mere experience never could. "For you alone I wanted to be a poet," he confided to Bakunin's sister, breaking off a youthful love affair; "for you, to whom my heart is united in some inexpressibly wonderful way so that it's almost as if I do not actually have to see you or feel the need actually to talk to you—which is why I cannot talk to you as I should—but despite all that, when I am writing, at those lonely and profoundly blissful moments of creation, you are always with me." Even as a young man, he preferred contemplating his life to living it, and by the time he reached early middle age, his letters had become as world-weary as an old man's. "Any hope of finding *personal* happiness in life has long since faded for me," he announced when he was only forty-two, and he started rehearsing his obsequies ("Decay and death and falsehood—such is life in this world") decades before he died.

This elegiac pessimism comes as no surprise, for it is the predominant motif in Turgenev's novels. Missed opportunities, thwarted hopes, the renunciation of happiness for duty: these are his themes. In *First Love*, the narrator recalls a youthful rivalry with his father over a beautiful young girl, and sadly concludes: "What has come of it all—of all that I had hoped for? And now when the shades of evening are beginning to close in upon my life, what have I left that is fresher, dearer to me, than the memories of that brief storm that came and went so swiftly one morning in the spring?" Lavretsky, the aging widower of *Home of the Gentry*, whose momentary happiness with a new love is destroyed when it turns out that his hated wife is still alive, revisits the scene of his ill-fated courtship and is overwhelmed "by a feeling which has no equal in its sweetness and bitterness—a feeling of



gia. His novels are suffused with ardor for the vast land he left behind, the creak of carriage wheels on the snowy roads, the overgrown gardens, the nightingales that sang beyond open windows through the long summer nights. The sensuous texture of rural Russian life is everywhere in his work: in the precise naturalistic detail of the *Sketches from a Sportsman's Notebook*; in the opening pages of *On the Eve*, where two young men loll on the banks of a river, talking amid the chirp of crickets, "that hot sound of life"; in the last chapter of *Home of the Gentry*, where Lavretsky returns to the scene of an unhappy love affair and finds his memory revived by the "fragrance of fresh wild growth, of woods and grass and lilac." Living

this unnerving candor. "Some of your works I have liked a lot, others not at all," Turgenev admitted—which was mild compared with what he wrote to his friends about *War and Peace* ("positively bad, tedious and unsuccessful") and *Anna Karenina* ("he cannot get out of the Moscow bog into which he has crawled"). Their correspondence is a duet of hurt feelings and recriminations that on one occasion nearly culminated in a duel; only a comedy of misdirected letters saved them from the fate of Lermontov and Pushkin.

But if Turgenev was hard on his contemporaries, he was just as hard on himself. What is so admirable about these letters is their humility. "The question remains, am I able to do anything on a larger scale?" he wrote the critic P. V. Annenkov apropos *Sketches from a Sportsman's Notebook*:

James Atlas is an associate editor of The Atlantic.

living sorrow for vanished youth and for a happiness that was once possessed." And in *Spring Torrents*, Dmitry Sanin, now in his fifties, returns to his room after a convivial but empty evening among friends to brood over the chance for happiness he squandered in his youth, when he fell in love with an Italian shopgirl, proposed marriage in a fit of passion, then succumbed to the predatory advances of another woman. Passion supplies the most intense moments in our lives, and then destroys us; the safest course is simply to recollect one's early love affairs from the vantage of mature tranquillity.

IF THERE WERE few happy affairs in Turgenev's fiction, there were fewer in his life. His liaison with Pauline Viardot was passionate but unfulfilling, and some biographers have questioned whether their affair was even consummated. What is certain is that by 1850, when Turgenev was only thirty-one, Pauline had made it clear that she was unwilling to contemplate any attachment that might threaten her placid domestic life—a decision Turgenev accepted only because he had no choice. Seventeen years later, he was still desperately in love. "Those days in Berlin; those unexpected and wonderful meetings; everything; and then the cruel parting," he wrote her from St. Petersburg in 1867:

It was all really too much for me. I felt myself overcome by the weight of those unforgettable events, the like of which I had never experienced before. Ah, my feelings for you are too strong and powerful. I can no longer live apart from you. I must feel and delight in the nearness of you. A day which is not lit up by your eyes is lost. But enough, enough, or I shall lose control of myself. . . .

His last *affaire de coeur* was perhaps the most poignant of all. Turgenev was over sixty, the actress M. G. Savina only twenty-five, when he instigated a feverish epistolary courtship, declaring his infatuation in ecstatic, high-flown prose and imploring her to visit him at Spasskoye. An hour spent with her in the compartment of a railway carriage became an obsessive memory, "the last flicker of the icon lamp":

This irresistible need to merge, to possess, and to surrender oneself, when even sensuality is lost in the flickering flame . . . I am probably

talking nonsense, but I would have been unspeakably happy if only . . . if only . . . And now, when I know that this can never be, I am not exactly unhappy, I don't feel any particular sadness, but I deeply regret that this delightful night is now lost for ever without touching me with its wing.

There is a curious animation in Turgenev's letters to Savina, as if he were more inspired by what could have been than by what was. Longing was his natural condition; and his mournful, pensive letters, like his novels, reflect an awareness of life's pitiful brevity, its pathos in those moments when we recognize our fate. □

SHORT REVIEWS



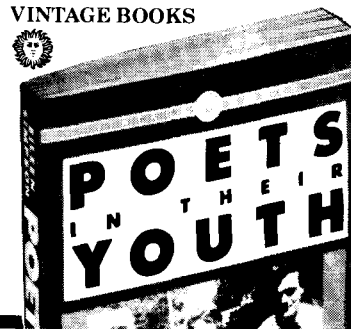
THE LAST LION: WINSTON SPENCER CHURCHILL by William Manchester. Little, Brown, \$25.00. Mr. Manchester is a fine biographer with a fine subject, which he presents with care and skill, to the great pleasure of his audience. Churchill's life was truly extraordinary, in part because, as he himself put it, "I like things to happen, and if they don't happen I like to make them happen." As Mr. Manchester describes Churchill's roles from 1874 to 1932—neglected child, refractory student, army officer, unorthodox war correspondent, successful author, rising politician, first lord of the Admiralty, father of the tank, turncoat, parliamentary gadfly, allegedly the worst chancellor of the exchequer in history, and eventual party castaway—he fills in, generously and vividly, the background of men and events surrounding his hero. It does not diminish Churchill's stature that one gradually comes to see why so many of his colleagues in government found him unendurable. Witty, versatile, highly intelligent, intellectually original, and uncontrollably energetic, he struck ordinary men as a fellow altogether too inclined to board somebody else's boat and start rocking it. (Churchill thought he was merely plugging the leaks and repairing the engine.) The book runs to more than 800 pages, and there is not a dull line in it. The copious quotations go off like fireworks.

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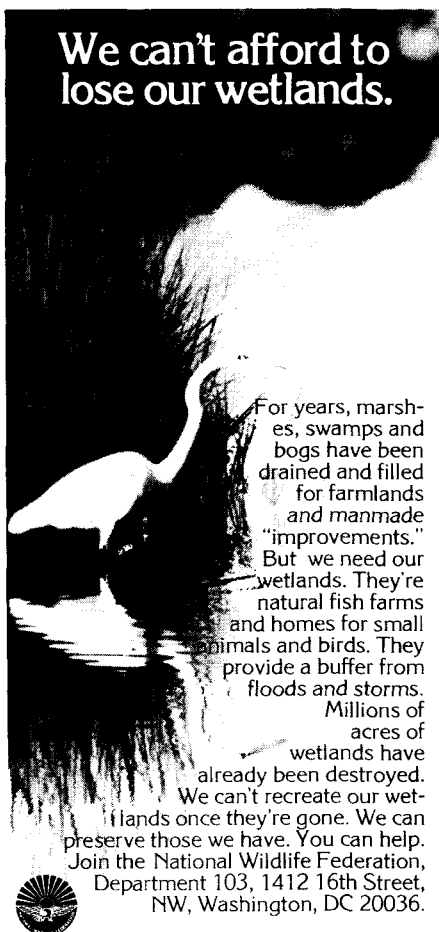
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WHOSE LITTLE BOY ARE YOU? by Heywood Hale Broun. St. Martin's, \$14.95.

"Heywood Broun and Ruth Hale, his wife" (as the two signed themselves, to the annoyance of hotel clerks), were aggressively liberal and liberated 1920s types, journalists, members of the Algonquin Round Table set. They had suffered from repressively old-fashioned upbringing—or thought that they had. Their only child, Heywood Hale Broun, was therefore to enjoy freedom, responsibility, equality, and the latest fads in progressive education. It took the poor guinea pig years and a bout of psychiatry to recover from these benefits, but he did, and has written a modestly entertaining account of his juvenile miseries.

A BITTER FOG by Carol Van Strum. Sierra Club/Random House, \$14.95. The author lives in Oregon, alongside the forest of a lumbering company that, like most of its kind, uses chemical sprays to control undesired plant growth. When the Van Strum children were accidentally sprayed, they fell sick. The episode led Mrs. Van Strum to investigate the effects of spraying in the whole district, and to uncover an alarming pattern of illnesses, miscarriages, and deformed births. Efforts to get cooperation from the lumber company or action from the Environmental Protection Agency accomplished little, but taught her a lot about the methods used to test and license chemicals. Her account of official evasions and obfuscations supports her claim that the regulation of dangerous substances has become "a cruel hoax played on a trusting public," making human beings involuntary "test animals for federal agencies' experiments with fraudulently registered poisons." Mrs. Van Strum's troubles began in 1975, which suggests that the euphoria aroused by the recent shake-up in the EPA may be premature.

THE DOG BOOK edited by Jerrold Mundis. Arbor House, \$18.95. Mr. Mundis has assembled a collection of stories, essays, reports, and remarks about dogs. He has even included a bit of poetry, the only point on which his judgment may be questioned, for it is not the best poetry available about dogs. The prose selections, new or old, fact or fiction, familiar or exotic, are admirable, and the book as a whole should delight dog lovers. They deserve it, as a reward for surviving the recent spate of cat books.

THE NAME OF THE ROSE by Umberto Eco. Harcourt Brace Jovanovich, \$15.95. The Italian author teaches semiotics at the University of Bologna; he is also expert in medieval aesthetics and rhetoric. These seem unpromising interests for a fiction writer, but the historical novel Mr. Eco has derived from them is absorbing and provocative. It is, technically, a murder mystery, complete with an amateur detective who could be described as an ancestor of Sherlock Holmes, if such a designation were not insultingly inappropriate to a learned Franciscan brother. William of Baskerville, on a diplomatic mission in northern Italy, arrives with his grass-green Benedictine chronicle at a monastery plagued by inexplicable deaths. He is invited to disentangle the confusion, although, in the year 1327, misdeeds in a monastery are a trifle to the uproar outside it, which consists of a serious threat to the Franciscan order, two reciprocally excommunicative popes, several armies in the field, and more heresies than young Adso (a paleo-Watson) can keep track of. Baskerville's investigation leads to conversation with a number of monks, most of whom are eloquent and argumentative on anything except the question of who pushed Brother Adelmo out the window. Discussion covers what today would be called distribution of wealth, administration of justice, methods of government, and purposes of education—always in theological terms and always formally reinforced by quotation from ecclesiastical worthies. One suspects that these conversations, thick with impracticalities and intellectual vaporings, are paraphrased, if not outright quoted, from documents of the period, and as they accumulate, one begins to understand how medieval clerics reasoned. Then one begins to think in the same way. Finally, with a certain discomfort, one realizes that these antique habits of thought are still present and active, working under modern aliases. This is the real purpose of Mr. Eco's novel—to make the reader see the similarities between the fourteenth century and today. The mystery, while not irrelevant, is frosting on a rather acrid cake.

THE WANDERING UNICORN by Manuel Mujica Lainez. Taplinger, \$16.95. In his introduction to this fantastic novel, Jorge Luis Borges describes it as "like a glowing dream set in the past." It is indeed dreamlike in its combination of su-

A PRIVATE VIEW by Irene Mayer Selznick. Knopf, \$16.95. In a fit of temper with a recalcitrant director, the author snapped, "I've survived Louis B. Mayer and I've survived David O. Selznick. It's no use. You better lay off." The man came to order at once, for Mayer was her overprotective father and Selznick her erratic husband. Escaping from both these dragons of show business, Ms. Selznick turned to the legitimate theater, producing *A Streetcar Named Desire*, among other distinguished and successful plays. Since her memoir is naturally divided between Broadway and Hollywood, partisans of each may wish for more about their favorite place and less about the other, with everybody becoming slightly disappointed. Connoisseurs of domestic oddity, however, will relish the account of life among the Mayers, who were a family capable of converting trifling disagreement into major warfare. The author spent her youth dodging through emotional minefields, a training that probably accounts for a touch of wariness in her recollections.

GUSLIAR WONDERS by Kirill Bulychev. *Macmillan, \$16.95.* Mr. Bulychev is described as a writer of Soviet science fiction, but his clever, amusing short stories, which present ordinary human problems and characteristics in extraordinary terms, have more connection with the folk tale than with the laboratory. They make beguiling reading, regardless of their category.

A GREATER GOOD by Robert B. Zevin. Houghton Mifflin, \$14.95. **THE PRICE OF POWER: Kissinger in the Nixon White House** by Seymour M. Hersh. Summit, \$19.95. Portions of these two recently published books appeared in different form in *The Atlantic*.

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“WASTE
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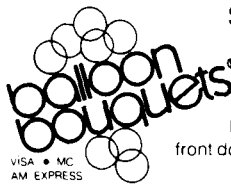
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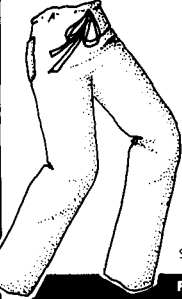


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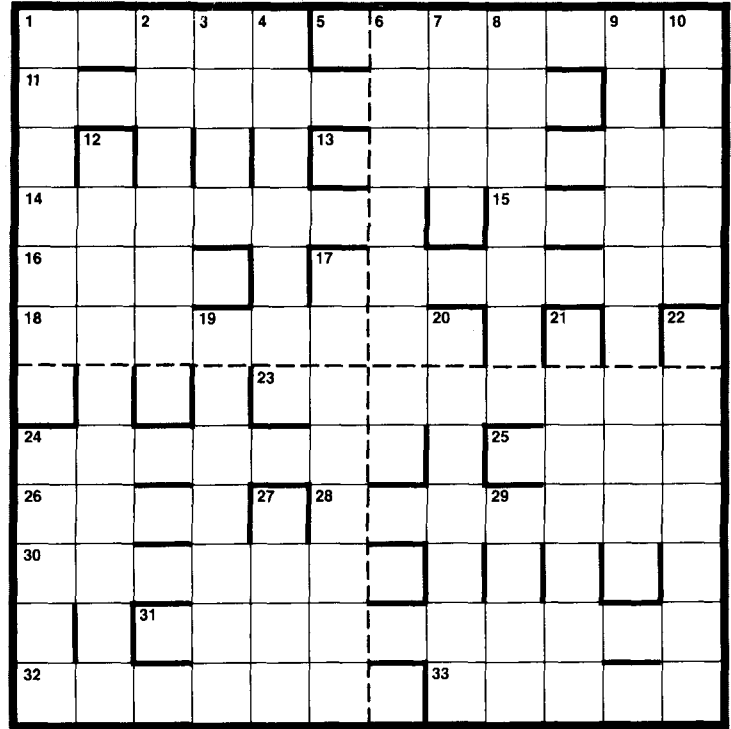
THE ATLANTIC PUZZLER

BY EMILY COX AND HENRY RATHVON

QUADRANTS

Each quadrant of the diagram is governed by its own set of rules. In one quadrant, both Across and Down words are entered normally; in a second, both Across and Down entries are reversed; in a third, Acrosses are normal and Downs are reversed; and in the fourth, Acrosses are reversed and Downs are normal. Any portion of an answer falling within a given quadrant follows the rules for that quadrant. So the 12-letter Across word **CROSSHATCHES** would be entered **CROSSHSEHTA** if going from a normal quadrant to one in which Acrosses are reversed; or **HSSORCATCHES** if going from reversed to normal. Of course, solvers must determine the rules for each quadrant. Answers include four proper nouns.

*The solution to last month's
Puzzler appears on page 109.*



ACROSS

1. Letters put forward, backward (5)
5. Number one in factory-operating (7)
11. Woes being passed around in a TV program (10)
13. Charted crime for hearing (7)
14. Announcer of show is nobleman in audience (7)
15. Ugly villain is so rejected (4)
16. Worker put egg into jug (4)
17. Nothing makes changes in flower parts (7)
18. Leading couples from chic area come also for barbecue item (8)
23. Dancing and song enthralles royal family member (8)
24. Splitting a doughnut after a signal for quiet (7)

25. Food in a cube (sort of square) (4)
26. To run a country (4)
28. Lowest name set apart (7)
30. Booze oozed and rolled (7)
31. Tailor gains bread making suits (10)
32. People unwisely salt nuts (7)
33. A biter in summer? (5)

DOWN

1. Unity may make no sense (7)
2. Regarding pretty reward (7)
3. City Nero lost (4)
4. Man doing imitations is making a pile (7)
6. Stating a vow, at first, and goofing (8)
7. Protective covering for post (4)
8. Drives train through supports (7)
9. Miracle one works with ritual (10)
10. Mad Dane's chair (5)
12. Building track around you (10)
17. Romance novel—large serving of mush? (8)
19. A beatnik receives pinch from athlete (7)
20. Bad oil user gets worse (7)
21. Doctor aided on abnormal growth (7)
22. One taking part in crazy time with wine (7)
24. Casually play some instruments (5)
27. Qualified backing for island (4)
29. Laborer seen drunk (4)

2707 4477

Note: The instructions above are for this month's puzzle only. It is assumed that you know how to decipher clues. For a complete introduction to clue-solving, write to The Atlantic Reprint Department, 8 Arlington Street, Boston, Mass. 02116, enclosing a self-addressed, stamped envelope.



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More room than Cavalier, Escort, Lynx, Pontiac 2000 and VW Jetta. More than Cadillac Cimarron, Mercedes-Benz 300D, Peugeot 505, BMW 320i, Audi 5000 and Volvo GLI.

BETTER GAS MILEAGE, TOO.

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ADVANCED FRONT-WHEEL DRIVE.

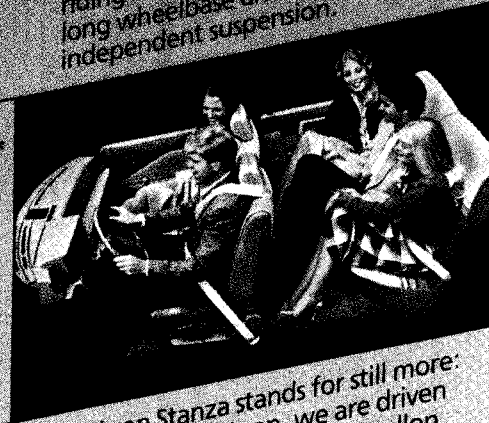
Nissan Stanza's weight is distributed almost equally between front and rear wheels.

This balanced stance lightens steering effort and, combined with a precise rack-and-pinion system, lets you move through curves as if on rails.

45 31*
EST. HWY. EPA EST.
MPG MPG

With 5-speed. Remember, use the EPA estimated MPG for comparison. Your actual mileage may differ depending on speed, weather and trip length. Actual highway mileage will probably be less. California mileage lower.

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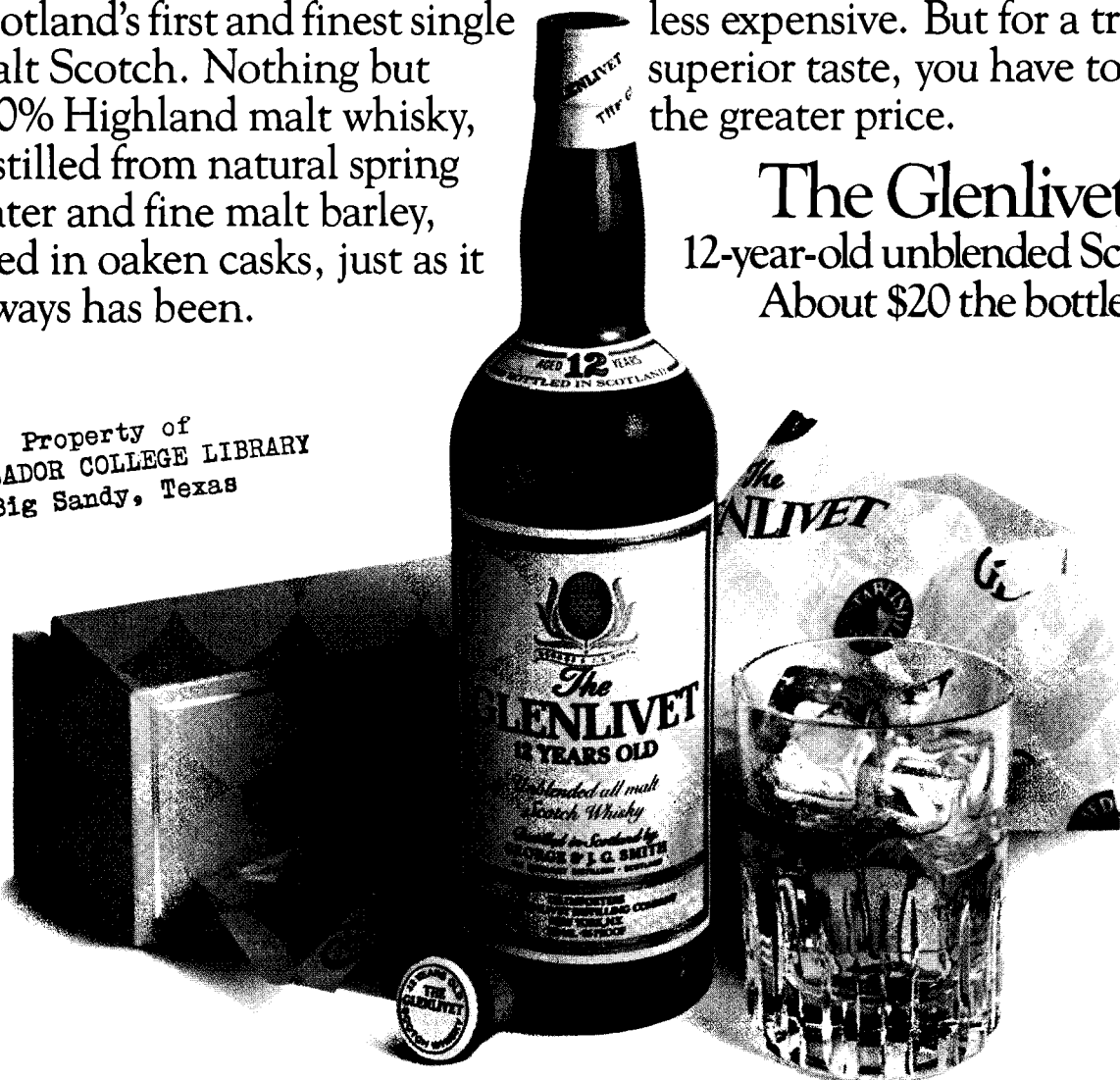
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